

ASTOUNDING

STORIES



*The Shadow
Out of Time
H.P. Lovecraft*

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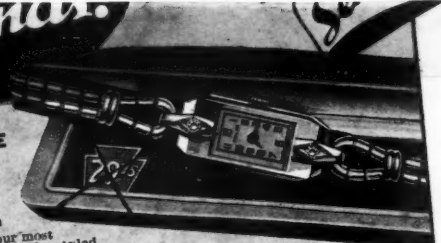
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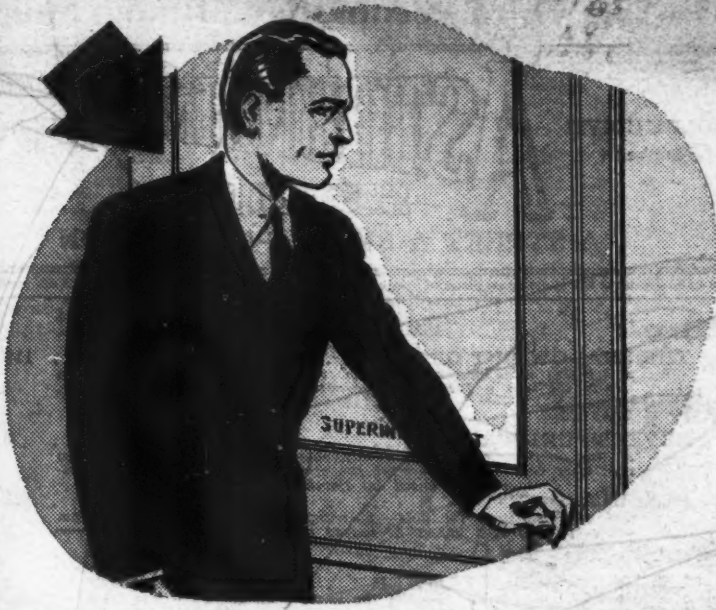
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VOLUME XVII
Number 4

JUNE
1936

ASTOUNDING STORIES

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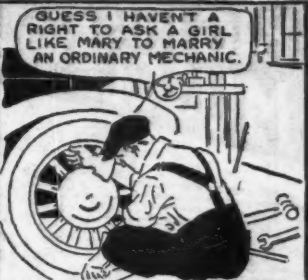
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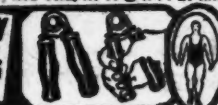
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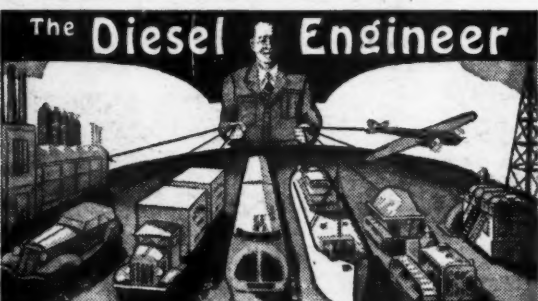
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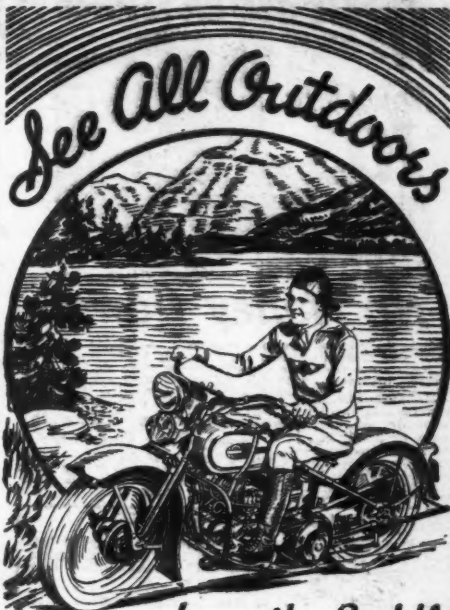
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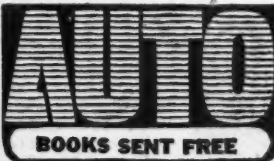
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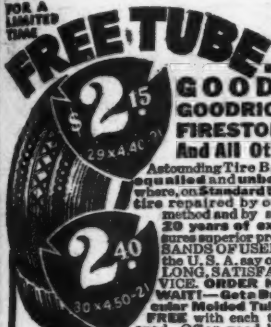
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Reverse Universe

They were resting on the surface of a fantastic, unbelievable world. Surface? Rather the concavity of the inside of a shell, stretching slowly upward—

by Nat Schachner

THE huge space ship was traveling fast—faster than space ships had ever traveled before—so fast its speed approximated the limiting velocity of light. Yet to the crew immured within its metal hull there was no sense of motion, no sense of anything but a fixed, immutable suspension in a void that had neither form nor meaning.

For the thousandth time Richard Talbot, first officer of the *Pathfinder*, peered through the view ports in the quartz-enclosed conning tower. For the thousandth time the monotonous, death-quiet universe stared back at him, mocking these puny mortals who in their swollen pride had sought to penetrate her close-held secrets. Space, black with a blackness unknown to Earth, enshrouded them in palpable embrace. Against a far-flung back drop, equidistant whichever way he turned, were the stars, millions of them—frozen, diameterless points of light, shedding no luminance, unshimmering, remote.

The spider line on the forward port bisected a slightly larger star, a trifle greater than its myriad fellows; the spider line on the after port held with unwavering intensity on a faint, somewhat inconspicuous glimmer of reddish light. At least, thought Talbot with a little shiver, their course was straight. For the little gleam behind was the Sun, from whence they had come, and the white glow ahead was Alpha Centauri, their destination.

He stole a look at the other man in the tower. Captain John Apperson amazed him, now as always. He stood there, legs wide to sustain his powerful, thickset body, hands clasped behind his back, staring with fixed rigidity through the forward port. Never once had Dick Talbot seen him deviate from this position; never once had he turned his craggy head with its great shock of iron-gray hair and grayer beard to the right or to the left; never once had he deigned to seek with questing, homesick eyes the dim, faint star they had quitted years before.

He was unhuman, thought Talbot, with a queer mixture of admiration and adumbrating repulsion. He was not a normal man with normal longings and hesitations. He was incredible, a piece with the incredible universe in which they seemed a moveless entity. He was dressed as always in the carefully spick-and-span, bright-blue uniform of a captain of the solar spaceways.

The crew had long since abandoned all attempts at spruceness and neatness. They slouched around in dungarees, performed their simple tasks with unstrung lassitude, forgetful of personal cleanliness and unshaven beards, spending their interminable leisure in endless sleep or muttered conversation. Earth and all the other planets, of course, were invisible, had been invisible since the first desperate taking off from icebound, uninhabited Pluto.

Talbot cleared his throat noisily. The

captain did not seem to hear. All his life was concentrated in his eyes, in the fanatical gaze he fixed on the tantalizing star ahead, the ever-beckoning, ever-remote Alpha Centauri. Sometimes the first officer thought privately that Captain Apperson had gone mad with the dreadful space madness that occasionally afflicted green hands even on the comparatively short interplanetary hops.

There had already been three casualties among the crew—men who had suddenly turned on their fellows screaming and amuck—one in fact had almost opened the air locks before he had been detected and killed. The three bodies, sewn in canvas shrouds, were now solitary bits of flotsam far behind in the unimaginable reaches of space.

TALBOT cleared his throat again. He touched fingers to his cap. He was a bit resentful of that. It was the first time in all his ships that a commander had insisted on that meaningless routine of discipline from his first officer in the privacy of the conning tower. Captain Apperson was notorious for his iron-bound, martinet discipline. That was the reason the Spaceways Exploration Council had chosen him for this tremendous flight into the unknown.

"I wish to report, sir," Dick Talbot said formally, "that the daily inspection shows all equipment to be shipshape, the instruments in perfect order, and the course undeviating."

"Very good, mister," Captain Apperson growled without turning his head. It was an implied invitation to retire. But Talbot held his ground, his lean young jaw firm, his gray eyes snapping.

"The *mechanical* equipment is all right, sir," he emphasized, "but I'd like to talk to you about the crew. They are——"

Apperson's eyes were still fanatically engrossed on that far-off goal, but his voice was icy in its interruption. "I believe I placed Second Officer Solon

Fithian in charge of personnel," he said deliberately. "Any reports concerning the crew must emanate from him."

Damned old martinet! Talbot raged to himself, but kept his voice calm. "I'm sorry, sir," he insisted, "but Mr. Fithian does not seem to notice. There's trouble brewing. The crew is scared, space sick, homesick if you wish. They feel that if we continued, not a one will return alive. They resent, too, the harsh disposition of their comrades who went mad. I've heard snatches of talk, felt the sullenness of their looks, seen muttering groups break up as I approach. I'm afraid, sir——"

Now the captain wheeled. His eyes were a cold blue, icy as the waters from newly melted glaciers. "Mutiny is the word you wish to imply, isn't it, mister?"

Talbot met his withering glance with level gaze. "Yes, sir," he agreed. "Unless something is done at once to remedy conditions, such as——"

The old captain's face turned a beet-red. His gnarled hands clenched and his voice was thick with passion. "You forget yourself, mister," he roared. "Your job is navigation, and mine is to run this ship. I intend doing it without any suggestions from you or any one else. Do you understand?"

Talbot flushed under his space tan. "I understand," he said steadily. "You are the captain and in command. But no captain in all the spaceway has ever spoken to men like that and gotten away with it. You'll listen to me and like it, sir, even though you put me in irons afterward, or cast me out through an air lock as you did those poor fellows your vaunted discipline drove to madness. Let me tell you——"

APPERSON'S FINGER was stabbing a button on the controls. His face was apoplectic. The slide door opened softly behind Talbot, and a smooth, silky voice thrust its even thread across

the raging torrent of the young first officer's anger.

"Your orders, Captain Apperson?"

Talbot whirled to face a slight, dark man with delicate, womanish features and eyes that had a queer habit of staring through their objective with unfocused lenses.

"Mr. Fithian," Apperson growled abruptly. "I have received reports of grave unrest among the crew. *Mutiny*"—he laughed harshly—"was, I believe, the word used. You're the personnel officer, mister. What have you to say?"

Solon Fithian gaped in startled fashion. His unfocused eyes roamed stealthily past Talbot, fixed on the spider line bisecting the white glow that was Alpha Centauri. "Why," he declared in his soft, shocked voice, "it's impossible, sir. The crew is quite contented and obedient, sir. I haven't had the slightest trouble. But who"—he broke off and again his glance slid past them—"could have brought you such a tale?"

"The first officer," Apperson rumbled, "your superior in command."

The knuckles on Talbot's hands were white, but he held himself under control. "It is a tale, Fithian," he stated sharply, "that it is surprising you know nothing about."

The second officer's left hand was behind his back, but Talbot, in the rush of his scorn, did not notice. Only later did he remember that surreptitious gesture.

"In fact," Talbot continued, "I called the condition to your attention before this, and you promised to investigate. The crew is on the verge of mutiny, yet you pretend to Captain Apperson there is nothing wrong."

Fithian laughed, shrill and high and womanish. He seemed to double up with laughter; he went off in uncontrollable spasms that filled the conning tower with beating waves of sound. "Stop it, mister!" the old captain thun-

dered. "What do you mean by this unseemingly cackling in my presence?"

The second officer straightened up, eyes gliding past Talbot with a curious absence of mirth; then he doubled up again with shrieks of wild laughter. "I—I'm sorry, sir, but I—I can't help it. Mutiny—that is funny, sir. Ha! Ha! Ha! Ha-ah!"

Apperson stepped forward, gripped him by the shoulder, and shook him violently. "Have all my officers gone crazy?" he snapped. "Stop it, mister, or I'll clap you both in irons, and run the ship myself."

The quartz-inclosed space was a welter of rolling echoes, loud voices and still-screaming laughter. Thus it was that Talbot did not hear the approach of stealthy feet along the inner catwalk until it was too late.

They came on with a rush, filling the tiny conning tower with their hulking, unwashed bodies. Flame projectors snouted in their grubby fingers—weapons that should have been under seal in the arms compartment—and hatred glared from their half-mad eyes.

Talbot's hand darted down toward his belt where his needle ray dangled, stopped with a jerk. A half dozen projectors were trained on him, ready to blast him out of existence.

"That's better," snarled the leader, a big, shaggy fellow with tawny beard and twisted nose. "Now get over there, all of you, away from the control board. One peep or move out of any of you, and you'll get a bellyful, see!"

THE FIRST OFFICER backed obediently away. No sense in committing suicide. But his lithe frame flexed imperceptibly, seeking an opening.

Captain Apperson did not stir. "What is the meaning of this?" he demanded in a terrible voice. "Get back to your posts, every man of you, before I put you all in irons for the rest of the voyage."

"It is mutiny, my dear captain," a silken voice purred. "Just as the faithful Talbot had tried to report to you, and you in your stupidity would not believe." Fithian moved forward like a cat, a sneer on his small, dark countenance. "You've given orders long enough, Apperson," he said. "From now on it's my turn."

Captain Apperson turned and stared at his erstwhile subordinate for a full minute. There was contempt, biting scorn in his stare; then he turned away silently, his gesture unmistakable.

Fithian started, and his dark face flamed. Venomous hatred glowed in his eyes. "You've sealed your own fate, Apperson," he whipped out. "I was going to give you a chance, but now— All that we wanted was your consent to turn back. This trip of ours is pure suicide. Two years we've been gone, and there are more than two years to go. The men are going mad, one by one, and you've done nothing to stop it. You and your lousy discipline!"

"That's right," shouted the leader of the mutineers. He was Marl Horgan, tender of the forward jets. "You treat us like dirt, like scum on the surface of Venus. We're men and we've got rights. We ain't going any farther. There's just enough fuel now to turn around and get back to the solar system."

The old captain looked at him as if from an Olympian height. "Fool!" he said deliberately, "the lethal chamber awaits every man of you, back on Earth. You know the penalty for mutiny."

Horgan grinned. "It ain't gonna be mutiny," he declared meaningly. "Just one of those unfortunate times when the captain ups and dies, and the other officers naturally decide to give up and turn back. We'll all be wearing deep mourning for our beloved captain; won't we, mates?"

There was a delighted roar of mirth

from the crowding crew. Fithian smiled a secretive smile.

Apperson surveyed them calmly. He straightened up, brushed off his immaculate uniform with a steady hand, buttoned the top button precisely. The waves of hatred that beat upon him left him unperturbed; he had only the consciousness of duties well and properly performed.

"If you think," he said, "that I'm going to beg for my life, you're damned mistaken. Get it over with."

The flame projectors moved upward. He faced them unafraid. Talbot let his hand drop stealthily. One swift tug at his belt and—

"No you don't," Horgan growled. "One move like that and you join the captain."

"You have to get rid of him, too, men," Fithian said.

THE MEMBERS of the crew looked at each other uneasily. Horgan's seamed forehead was heavy with unaccustomed trouble. Talbot had been rather popular with the men.

"There ain't really any call for that, is there, Mr. Fithian?" Horgan asked almost pleadingly. "Mr. Talbot's been pretty white to us fellows. We'd sort of hate to blast him out."

The crew growled assent. They were ordinary men, driven to cruelty by harsh, unyielding discipline, and a touch of space madness.

Fithian's face was sallow with fear. "Don't you understand?" he cried vehemently. "Talbot alive means the lethal chamber for all of you back on Earth."

Horgan frowned heavily. "We got no grudge against you, Mr. Talbot," he said. "Give us your word of honor you won't blab on us, and we'll let you be."

"Of course he'll talk," Fithian shouted hysterically, "no matter what he tells you now."

"We can trust his word," Horgan retorted confidently. "Can we, mates?"

"Sure can," they flung back.

Talbot looked at them with a wry smile. "Thanks for your faith in my given word," he answered quietly. "It is not misplaced. That is why I can make no such promise. Furthermore, Captain Apperson is our commander. He is an honest, efficient captain. Whatever errors he may have committed were not out of malice toward you men; they were for what he conceived to be the best interest of the ship. I am therefore compelled to share his fate, whatever it may be."

There was a hasty consultation after that. From where they stood, under vigilant guard, Talbot could hear the excited murmur of voices, shot through with Fithian's treble and Horgan's angry bass. Their fate depended on that babble of argument.

Horgan coughed hastily. "It's this way, Mr. Talbot," he addressed himself to the first officer, ignoring Apperson. "You make it pretty hard for us."

"Omit the flowers and get on with it, Horgan," Talbot said quietly.

"We decided," the rocket tender plunged, "to put you both off in the space boat. There are enough provisions stowed on board for both of you for six months, or thereabouts; and there's enough fuel in the rocket tubes at least for a landing."

Talbot looked him squarely in the eye. "You know what that means, Horgan: Eventual drifting to death in interstellar space. There's no possible place in the universe we could reach with that supply of fuel and food."

The rocket tender avoided his gaze, shuffled his feet uneasily. "It's the best we can do—that or shoving you out into space without a suit."

"That would be quicker," Talbot retorted.

"We'll take the space boat," Captain Apperson interrupted. It had been the first time he had spoken since the ir-

ruption of the mutineers. Talbot looked at his commander in astonishment. Had the man gone mad—or chicken-hearted? Surely quick, merciful death was preferable to the horrors of slow, tortured agony in the illimitable wastes. But Apperson's bearded features were as stony as ever.

TALBOT watched the red jets of fire pierce the black curtain of space like lancing swords. It was spectacular; it was breathtaking in its dazzling effects, but he was not given to aesthetic appreciations at that particular moment.

Slowly, the dull, almost invisible hull of the great space cruiser turned under the repeated blasts of the rocket jets. Space was a fan of brilliant flames. The tremendous maneuver required a hundred million miles of turning area and almost all the reserves of fuel to swing the *Pathfinder* on its long, backward trek to the outpost on Pluto.

Suddenly the huge cruiser was gone, swallowed up in the vast emptiness of the universe. The two men were alone now; alone as no one had ever been since the beginning of time. Incased in a tiny space boat, built for emergency use in the comparatively crowded lanes and short hops of the solar system, abandoned in an amplitude of infinite space time, trillions of miles from the nearest star.

Talbot turned his face from the rear port in despair. It was now almost a half hour since the prison boat had been cast off from the magnetic plates of the parent cruiser. Up to the end he had hoped against hope that Horgan and the crew might relent, that they still might swing back to pick them up.

Of Fithian he had expected no such yielding. But there had been a certain hunted fear, a sympathy in the eyes of some of the men that might possibly have flared into action before the thing was done irrevocably.

Now, he realized dully, that last futile hope was gone. The great ship had faded from view, was even now fifty million miles away, speeding back to Earth with a plausible story concocted in the brain of Solon Fithian.

Earth! Home! Talbot felt a lump in his throat as his eyes burned on that faint, inconspicuous prickle of light, almost lost among its innumerable fellows. He thought of green fields and swarming cities, blessedly soothing to the sight after the monotonous glare of space. He thought of the men of the spaceways, brave, warm-hearted, loyal, whose hands had clasped his in greeting in every port of the solar system.

He would never see them again—not one of them. Better to open the air locks and die now. It would not be pretty. Space suicide was a torture of choking lungs and bursting tissues, but it was over in a few minutes. He swung around to his fellow victim. Now that he thought of it, he had not heard a word from Apperson since they had both been hurriedly thrust into the cramped quarters of their prison ship.

The captain turned almost simultaneously with him. No emotion showed on his stern, bearded face. His uniform was still neatly buttoned, his bearing erect.

"You will be good enough to get our bearings, mister," he said in precise, expressionless tones.

"Yes, sir," Talbot said briefly.

Some fifteen minutes later he lifted his head from the scribbled calculations before him. Apperson had stationed himself before the forward port, legs solidly spraddled, hands clasped behind his back, eyes glued in silence on the spider line that bisected the arrow of their flight.

"We are," observed Talbot, "almost equidistant between the Sun and Alpha Centauri—about twelve and a half trillion miles either way. Our present rate

of speed is 158,000 miles per second, approximately that of the *Pathfinder* before the mutineers cast us off. Our directional angle is some twenty-three degrees minus on Plane A from Alpha Centauri. But what of it, captain? It doesn't matter at all where we are. We're hopelessly, irretrievably lost."

APPERSON did not turn from his strange vigil. "You will please confine yourself, mister, to furnishing such information as I require," he snapped. "Be good enough to fire the right-hand rocket tubes until our course is true on Alpha Centauri." He hesitated perceptibly, then proceeded calmly. "Mister, then you are to fire all rocket tubes continuously to achieve maximum acceleration."

Talbot sprang to his feet. Good Heaven, the man was mad! Something had snapped in that martinet brain at the imminence of death.

"Do you realize," he demanded, "that even at the limiting speed of light, we'd reach Alpha Centauri about two and a quarter years from now? We have provisions on hand for only six months—not to speak of the fact that the air-renewing apparatus on these space boats works properly for a period considerably less even than that.

"Furthermore, our present speed is the maximum obtainable. From this point on the inertial lag of increased mass builds up rapidly and more than compensates for the forward thrust of the rockets. And granting even the impossible—that somehow we reach Alpha Centauri alive—our fuel reserves would have been exhausted and we'd have no means of navigating to a landing on any problematic planet that may revolve around it.

"No," he continued more calmly, "my advice as man to man—we are no longer superior and subordinate, mind you—is either to open the air locks and

get it over with, or swing back to the solar system on the remote chance that some expedition has set out to follow in our tracks."

Captain Apperson swung around. His face was contorted with suffering, his eyes blazed with the fixity of monomania.

"Give up the voyage!" he mouthed hoarsely. "Never! Not once in all my long career have I ever abandoned a course once set; not once have I failed to bring my ship through. I promised the council I'd get to Alpha Centauri, and by the eternal truths of the universe, I intend to do just that!" He pounded with knotted fist on the metal stanchions. "Dead or alive, crash or no, this ship to which I have transferred my command lands on Alpha Centauri—do you understand that, mister?"

Talbot stared at him a moment. It was the broad, uniformed back of the captain that held his gaze. For Apperson had pivoted again to his rapt immersion on that far-off sun, still only a point of light in the universe.

The man was mad, of course. Talbot could see that quite cleanly. It would have been a comparatively easy matter to spring on him now, and tie him to innocuousness. But a thrill coursed through the young first officer. It was a madness so exalted, so intent on its ultimate goal, so imbued with passion and driving force and heedlessness of obstacles that it partook of a nobility akin to the gods themselves.

For the first time he understood Apperson. A lonely old man, cut off from his fellow officers by his fanatical devotion to what he conceived his duty, hiding his loneliness by a fiercer attention to details and the minutiae of discipline, hugging to his bosom with mad, secret pride the reputation he had achieved until it had become an overwhelming obsession.

The mutiny must have been a terrible blow to the old man's innermost being. Only one thing could salve that wound: getting to Alpha Centauri! Even in death, a wasted, rotting corpse within the hurtling tomb of the space boat, somehow he would know that he had reached; and knowing, the suffering spirit that was his would be laid to rest.

"I understand," Talbot said very softly. Without another word he moved to the control board. The rockets filled the chamber with their subdued roaring. Slowly the spider line on the forward port shifted over the stars of the universe, held fixed and immovable on the brighter speck. Their course was set on Alpha Centauri!

That was simple navigation. The next step was another matter. With a shrug of his shoulders Talbot fired rear and side rockets, forced every ounce of fuel into the sheathed tubes to build up immense acceleration. The little ship quivered and jerked under the terrific impacts. The strain on metal plates and welded seams rose far beyond the calculated safety limits. The noise was unendurable.

THE VELOCIMETER moved slowly over the dial. One hundred and fifty-nine thousand, one sixty, one sixty-one, one hundred and sixty-two thousand miles per second. And there it held, in spite of the reckless pumping of fuel, in spite of Talbot's utmost skill in navigation. Lorentz's theorem held good! At extremely high velocities the inertial mass approaches the infinite so rapidly that not all the thrusting power in the world can compensate for it. And Talbot knew it.

Somberly he turned to Apperson. "You see," he said, "the thing is impossible. We cannot fight the laws of nature."

"Nature be damned!" the old man

barked. "Feed more fuel into the tubes. We must break through the speed of light if—if—" For the first time he faltered, felt the slow paralysis of doubt.

"If we are to make Alpha Centauri before we die," Talbot gently completed the sentence for him. He saluted with formal gesture. "I beg to report, sir, that the fuel tanks are dry."

They were still driving ahead at constant speed. Newton's First Law of Motion took care of that. In the tremendous emptiness of interstellar space the gravitational forces of the universe are extremely feeble and tend to balance themselves to a state of equilibrium. Allowing, as Talbot had done, for the proper motion of the star toward which they were heading, they would reach their objective. But they would reach it in not less than two years—a year and a half too late!

Captain Apperson was suddenly old and shrunken. All his life he had been a practical navigator, with the practical man's fine scorn of the theoretical scientists. Mathematics, abstruse reasoning, he left to his first officers. That was their business; his was to run a ship, to enforce iron discipline.

He had heard, of course, of the limiting velocity of light, but it meant nothing to him. It had never been tried out in practice. The interplanetary lanes did not readily lend themselves to such enormous speeds. "Give me a clear road and plenty of fuel," he had always argued, "and I'll build you up speed of half a million, a million miles a second if necessary. What's there to stop it?"

Now, for the first time, he was face to face with the reality. And it had let him down. A cherished illusion that he had hugged to himself during years of space travel had exploded. He was frightened. Were all the other iron laws of his being but similar illusions? He shrank from that, affrighted.

Then he straightened. Very slowly, very methodically, he brushed his immaculate uniform. At least one illusion must be preserved. Let the universe itself know that one thing at least within its confines was invariant. Captain John Apperson always reached his goal. What matter if physically he were dead; somewhere, far off or near, his spirit would know! Once more he was the autocrat of the spaceways, listening to his subordinate's report.

"Very good, mister, he replied with rigid formality. "Keep her to her course."

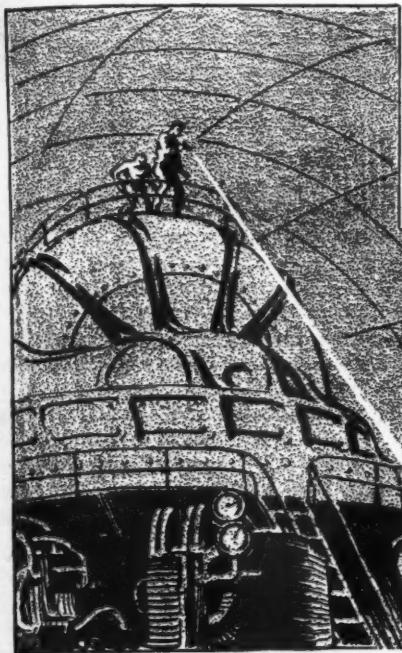
Talbot felt suddenly very tender to this lonely old man. He had sensed the terrific struggle in that uniformed bosom. Death meant nothing in the face of such an indomitable spirit. He saluted again. "Yes, sir."

THEY did not speak much after that these two, but a sense of kinship held them close. Days on weary days of Earth time passed and fled. Time held no further meaning, nor did space. They were a seemingly moveless ball suspended in the infinite void. The glittering back drop of stars mocked at them and showed no change.

Talbot checked over their supplies. They placed themselves on ironclad rations of food and drink. Even so they could not survive over six months. He tested the air renewal machinery, tightened leaks, gained maximum efficiency. Perhaps that too would carry on for a similar period. And all the time Apperson held to his eternal vigil at the forward port, seeking ever with hot, devouring eyes that infinitely remote point of light that had become a challenge to death itself, to the very meaning of the universe.

The days grew into weeks, the weeks into months. The velocimeter showed even speed—one hundred and sixty-two thousand miles per second. The pointer

seemed frozen in its place. Yet here, in the frightened reaches of space, it was the quiescence of death—not even the slowest crawl of a worm on that



far-off, tiny planet they had almost forgotten—

Talbot sat on his accustomed chair. They had just finished their very simple meal of condensed pellets. They were constantly hungry now, but that did not matter. Apperson was at his interminable watch at the forward port. Talbot stared back at the place where the Sun should be. It was impossible to see it any more.

He sat and stared at the blur of stars. His clean, chiseled features were lined now and a bit haggard. It was not easy to do this day after day, knowing too well the inevitable end. If it had not been for the old captain— He took a deep breath, forgetting for the moment the shallow breathing they had

AST-2

practiced to conserve the air supply. Good Heaven! He must not think! That way lay space madness!

Then it happened. One second the after port had been clear, and space a spangle of innumerable stars. The next moment blackness enshrouded the quartzite lens, a blackness that was impenetrable, the very nadir of nothingness.

Talbot sprang up with a cry of alarm. In that instant the space boat bumped,



There had been three casualties now—men who turned, suddenly, crazily—

shivered all over as if it had struck an invisible reef in the mid-emptiness of space. Out of the corner of his eye Talbot saw Apperson wheel, eyes wide with surprise. Then there was a tremendous crash, and the waters of oblivion flowed over his head.

HE AWOKE with nothing more than a slight headache. For the moment nothing seemed changed. The interior glowed with its normal cold-light illumination, everything appeared in its proper place. Nothing was damaged. What had happened then? He wrinkled his brow in puzzlement. Ah, yes, he remembered! The strange, sudden blanking out of space, the shattering bump, unconsciousness. But what had it been? Certainly there had been no meteor in space, no planet or star. Their instruments would have warned them of that.

He sat up. Captain Apperson had staggered to his feet, was looking at him intently, with queer, affrighted eyes. Why? He felt all right—nothing wrong, no injury, no hurt. Then why—

A scared, choking sensation overwhelmed him. He uttered a strangled cry. Great Heavens! What was the matter with the old captain? He stood there, as he had always stood, nothing changed, nothing—

With a bound Talbot was on his feet, eyes popping. That medal on Apperson's uniform, the one he kept bur-nished always and treasured as his life! It had been given to him by the Planetary Council for a particularly gallant rescue on the danger zone of the asteroids. It rested, securely fastened, on the right breast of his uniform!

Nothing extraordinary in that, surely, even though Apperson, the soul of order and accustomed wont, always wore it on the left. But the inscription thereon, that Talbot knew by heart, had

seen countless times—FOR VALOR ON THE SPACEWAYS—was a jumble of strange symbols now. Dazed, unbelieving, the answer dawned in Talbot's unwilling brain. The inscription was reversed; the very letters themselves read backward; as if—as if it were a mirror image of the true medal.

"You've noticed it, too," the old man said hoarsely. "Thank Heaven, then I am not mad!"

Talbot gaped at him. He understood now why Apperson had seemed so strange, so abnormally wrong. Little things, ordinarily not noted, yet sunk deep in the subconscious by daily association, marred the ideal symmetry of the human form, differentiated between left and right—moles, scars, part of hair, arch of eyebrows, contours of nose. Captain Apperson had been reversed! Left was right, and right was left, even as the medal on his breast. He was the mirror image of himself!

"You, too," groaned the old man. "Everything else! Look!"

It was true. Apparatus that had been on the right stood now to the left, the after port had exchanged places with the forward port, the control board—

Talbot jumped, peered in astonishment. The gauges read from right to left, as in ancient Hebrew script, but it was not that. The velocimeter had caught his incredulous eyes. The needle had lunged far over the reversed figures of the scale, was quivering with ecstatic pressure against the guard at the farther end. The land printed figure was the limiting speed of light. If the instrument did not lie, they were traveling at a rate far in excess of that ultimate speed which the universe itself had seemed to set on man's utmost efforts.

Talbot seized the commander's arm in a grip that bit deep with excitement.

His voice was awed. "Do you know what has happened?" he demanded.

Apperson was still examining him with puzzled eyes. "I can't say that I do," he muttered, shaking his shaggy, reversed head.

"This means," the young man explained rapidly, "that all our theories have been wrong—utterly, completely wrong. Somewhere in the universe, perhaps in another time, another space, beyond the reaches of our most powerful telescope, a superforce of unimaginable intensity burst the bonds of space time.

"Something was caught in this huge flux of force—a planet, a sun, a whole universe perhaps—and catapulted into mighty acceleration. The inertial lag built up, rapidly approached the infinite. But the irresistible force was not to be denied. It hurtled the infinite mass over the limiting velocity—how far beyond, our finite instruments do not, very likely *cannot* register."

Talbot went on with increasing enthusiasm. "Observe closely: A paradox occurred. At the velocity of light the mass became infinite, but, in obedience to the Fitzgerald Contraction Theorem, the length of the speeding body became zero. The inertial mass was wholly width without length, a line of infinite substance.

"But, as the speed increased, another phenomenon occurred. Instead of zero length, by the inexorable workings of the Fitzgerald Contraction, the length of the moving body became negative, a minus dimension. The greater the velocity over that of light, the greater the negative length. Which meant"—he gestured around the space boat, at themselves—"that we turned inside out, so to speak; that we were reversed, forward with backward, left with right.

"Apperson," he continued impressively, "that planet or universe overtook us, crashed into us. We are

in it now, being carried, Heaven alone knows where?"

"B-but," the commander stammered, clinging with straining effort to the one thing he could understand, "why didn't we see it coming? We both were watching. Our instruments, too, didn't register any approach."

"Because," Talbot explained, "the onrushing planet was invisible. It had to be, aside from any consideration of its possible existence in a fourth dimension of space—an inside-out dimension, as it were. Its velocity was greater than the velocity of the light waves that should have heralded its approach. It was faster than its own light, you see."

Apperson darted suddenly to the port. "Look!" he mouthed and could say no more. In two strides Talbot was at his side. Then he, too, gasped.

THEY WERE resting on the surface of a fantastic, unbelievable world. Surface? Rather the concavity of the inside of a shell, stretching slowly upward in a long curve until what should have been a horizon was shrouded in the far mist. A sourceless golden light pervaded the weird landscape, drenched its strange, myriad forms in warm illumination.

Queer monsters scuttled in the distance over ingrowing vegetation, too far away for accurate sighting. Lofty towers hung at unbelievable angles on the very verge of the horizon mist, wavering to their straining vision as if they were but bright illusions.

Talbot said with fierce enthusiasm. "There are beings on this world, beings of a high order of intelligence and civilization, who reared those marvelous structures."

But Apperson was not listening. "Look!" he pointed a trembling finger. "Look at those!"

They must have been insects or insectlike creatures. They had come up

swiftly around the curving sheath of the space boat, and they hovered with graceful, pointed legs and fragile, evanescent wings over the quartz of the port.

"Like gigantic May flies," Talbot murmured. "Those fitting insects of Earth that live but an hour or two. A short life but a merry one. Hello! What's happening?"

Before their very eyes the darting insects were shriveling, getting smaller and smaller. The sheen on their flashing bodies grew more lustrous and dewy. Then, suddenly, the wings collapsed, the creatures dropped slowly to the ground, twisted into curious fuzzy balls, became moveless. Almost immediately the cocoons unraveled, and fat, slimy grubs crawled out and scuttled into the surrounding grass.

The young man started back from the port with a little cry. "Why—why," he gasped, "if it weren't absolutely incredible, I'd say life has reversed itself here also. The full-grown insect became a cocoon, the cocoon a grub. If we could follow the grub, should we discover that it had matured into the natal egg?"

Apperson was bewildered. It was too much for him—this topsy-turvy business. Talbot stopped in mid-flight, stared at him. Was it imagination, or was the gray of the old man's beard growing steadily darker? Were the innumerable wrinkles of age on his countenance smoothing out, unfolding or—

Grimly, without another word, Talbot hastened to the tiny laboratory. He must hurry! Already he felt a strange new laxness about his own limbs, already certain memories were slipping like wraiths from his mind.

The experiment he performed was simple and took very little time. Yet when he came out to face his commander there was no further question about it.

The gray of beard and hair was definitely deepening into black. Nor had there been any question about the results of his experiment. His lungs exhaled oxygen, inhaled carbon dioxide!

It was true then. In leaping past the limiting velocity of light, not only had dimensions been reversed, but life processes themselves! Existence paradoxically began with death, proceeded through maturity to youth, then on to birth! They were getting younger every minute. The Fountain of Youth, long sought by wasting age, existed in this universe of superspeed.

"We've got to get out of this at once," he snapped to Apperson. He dared not tell him why. The old man, already younger, would never consent to his plan. Yet they must get away, and that immediately.

The velocity of this hurtling planet must be in the millions of normal miles per second, shuffling time processes at a like breathless pace. In a day or two of normal Earth time Apperson might become a lad of fourteen, while he, Dick Talbot, who once had been twenty-five, would reverse into an infant in arms. In another day— He went to work grimly, unheeding the captain's clamorous demands for explanation. He had no time to waste—every second was precious—nor dared he provide age with vain after regrets for what might have been.

Talbot opened the forward reserve tank. There were two of them, filled with fuel. He had not used them, Apperson unwitting, back there in that other universe—just in case!

Streamers of flame blasted out. The ground leaped from under them, the space boat jerked forward with tremendous acceleration. Every drop in the tank poured into the jets. There was a loud crash, a searing, rending concussion. Talbot fell violently to the floor, and the darkness enveloped him.

THIS TIME when he awoke, it was to aching bones and bruised flesh. It was dark. The lights had gone out or blown from the smash, but a faint prickle of points in the distance brought him bolt upright. Some one groaned near by, stirred.

"Are you all right, sir?" he asked anxiously.

The captain groaned again in the darkness, then growled with all his old asperity. "Of course I'm all right. But what the devil did you mean, mister, by shaking us up like that?"

Talbot disregarded the complaint. "Look at those stars out there," he exclaimed joyfully. "We're back again, in our own space and time. That blast shot us right out of the alien universe. Sorry to have shaken you up, sir, but it was the only way. I had to build up tremendous acceleration in the opposite direction to neutralize the supervelocity of their system, to bring us once more under the limiting velocity of light."

He could hear Apperson fumbling for the switch that turned on the emergency lights. He waited with keen anxiety to see what the illumination would disclose. As they sprang into being, he breathed a huge sigh of relief. Everything was normal again. Right was right and left was left, the very medal was in its accustomed place. But

one thing had not changed: the darker hue in the old man's beard, all unknowing to him; the younger resilience in his own limbs. That must forever be kept a secret from Apperson.

The commander surveyed him with icy deliberation. "You have brought us back," he agreed. "But we face again a slow, certain death. In that other world——"

Talbot grinned. "I figured on that, sir. That superworld was traveling fast, faster than we can ever possibly know. And it smacked us from behind, in the line of our own flight. Look through the forward port, sir."

A sun was rising, a great white, dazzling orb. From behind its molten disk a green-tinged planet swam, its rounded edge luminous with a wavering band of light.

"Alpha Centauri!" It was more than a cry; it was a prayer and a triumphant vindication both at once.

"Exactly," Talbot said. "With a planet that we can land on. I've still a tank of fuel left. From the looks of it, there is an atmosphere on the planet—perhaps even beings somewhat similar to ourselves."

He relapsed into the formal phrases of a first officer on a well-disciplined space flier. "I have to report, sir, that we have reached our destination. Prepare for landing."

*The Cards are stacked
against you*



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PROBAK JUNIOR

The GLOWWORM



Truly, I thought I was in Paradise!

BEWARE, gentlemen, before you attempt an interplanetary flight! Beware, not because you may not succeed, but because you may succeed too well! The indirect costs of your experiment may be more than it is worth!

Such was the celebrated warning

issued in August, 1976, by Dean Cameron Prince, holder of the Tri-Continental Award for Astro-Physical Research. It was in September of that year, as will be recalled, that the Reimers-Bayle around-the-Moon rocket car was to attempt its first flight.

The pronouncement of Dean Prince,

FLOWER by STANTON A. COBLENTZ

*The sort of science-fiction which this
writer alone can weave into a spell*

coming almost on the eve of the long-heralded excursion into space, naturally produced something of a sensation—although, when efforts were made to pin the dean down as to just what he had meant by “some new and unforeseen peril,” he resolutely refused to explain.

Amid the excitement of the preparations for the space flight, Prince's prediction was soon forgotten; nor was it to be generally remembered again for many months. On Sunday, the fifth of September, the rocket car ascended from an airport in Southern California; and, driven by the explosions of a new volatile fuel named hydrogyl, rapidly made its way toward the Moon.

Throughout the flight, the two occupants of the car were in constant radio communication with the Earth, and never at any time did they report themselves to be in difficulties.

Up, up, up they ascended, to a distance of more than three hundred thousand miles, then in a wide circle around the Moon, photographing its farther side, which had never before been revealed to the eyes of man, then down again to Earth, strictly on schedule time—so much so that, whereas the expedition had been planned to last forty-eight hours, they set foot on California soil precisely forty-seven hours and fifty-six minutes after their departure.

It was only to be expected, therefore, that Reimers and Bayle, the successful space fliers, should be fêted and applauded in a manner befitting the Christopher Columbuses of a new age. And while they, in the exhilaration of

their triumph, were contemplating an expedition to Venus, no one could even mention Dean Prince's prophecy without being laughed into silence. As yet there was not even an indication of any possible ill effect!

It is true, however, that there was one unexpected, although interesting result of the space flight. On the soil of the airport, close to the rocket car—which, for exhibition purposes, had been allowed to remain where it descended—a peculiar plant was observed springing up, a week or two after the completion of the flight.

AS the appearance of the plant—later christened the Glowworm Flower—has become familiar to every man, woman and child on the planet, it will be needless to describe it in detail. It was composed, as every one knows, of a curly mass of spidery, gray-green tendrils, which spun and twisted themselves into dainty whorls and patterns, no two alike, yet all as graceful as the curve of the lily.

There were no leaves; but near the end of the tendrils, as the plant approached its full height of two or three feet, a dazzlingly beautiful blossom appeared—a flower which, opening to the width of a large chrysanthemum, displayed a snowy-white heart, surrounded by innumerable rainbow-colored petals, which shimmered and shifted in complexion with every change of light, sometimes appearing pale-blue or lavender, sometimes delicately rose-colored, sometimes palely saffron-tinted, some-

times mauve or coral or faintly green or splashed with opalescent, creamy lines, but more often than not a combination of all these hues, and of a thousand others defying description.

Another peculiarity of the blossom was that, instead of being invisible at night, it glowed with a weird, almost ghostly phosphorescence—with a dim, silvery, moonlike radiance that made it visible from a considerable distance, and produced an effect at once pleasing and a little uncanny. And at times, from the white heart of the flower, little gleams and sparkles of light would appear, as though responsive to some intelligent will.

What made the plant even more wondrous to the senses was the strange, seductive odor it gave forth. There was something alluring beyond all words in its fragrance, which had a heady smell as of wine, and yet was sweeter, more pleasurable than wine—as though honey and ambrosia were blended in its composition.

It was observed that bees went almost mad in its presence, buzzing around the flower in wild excitement, until, sipping of the nectar, they would fall to the ground as if stunned, and only after the passage of an hour or two would be able to take to their wings again—whereupon they would immediately return to the Glowworm Flower.

Whence came this astonishing plant? Before a month had passed, it began to dazzle even the unobservant eyes of the airport attendants, one of whom had the good sense to clip off a fragment and send it for analysis to Professor Richard Wallen, of the botany department of one of the leading universities.

The latter, after conducting a microscopic examination, paid a hasty and agitated visit to the airport, where he sought out the attendant and asked to see the living plant at once. "Never," he swore, "have I observed anything like

it! The microscope reveals a cellular structure utterly different from anything I have ever encountered! Neither my colleagues nor I can understand it!"

Upon being shown the growing plants, the professor became still more excited. "It belongs to no known species," he stated, emphatically.

For the next few days, forsaking his duties at the university, the professor made his headquarters at the airport. Equipped with microscope, scalpel, and test tube, he investigated and experimented unceasingly in a little improvised laboratory he had installed with the cooperation of the airport officials; and it was not more than a week before he had made the announcement that electrified the Earth.

"I have proved," he proclaimed, "that the Glowworm Flower originates from an infinitesimally small three-pointed spore, of a type never known before. Multitudes of these spores have been found, upon microscopic examination, to be clinging to the sides and interstices of the Reimers-Bayle rocket car. The conclusion, therefore, is irresistible.

"They have been flying through interplanetary space, and have been picked up by the car on its flight. In what world they originated we do not know; but, manifestly, it was not Earth. Thus, for the first time in history, we may have the opportunity to witness the growth and development of extra-terrestrial life!"

THE SENSATION created by this announcement, it is safe to say, was hardly less than that aroused by the Reimers-Bayle expedition itself. Newspapers took up and featured the report; scientists rushed to Southern California, for a personal examination of the new plant; members of learned societies debated its significance, and physicists and biologists weighed the possibility of the survival of spores in outer space; the

public was startled into interest, and the Glowworm Flower became the subject of discussion among men who had but the vaguest idea of its meaning.

Had the plant originated on Mars, on Venus, or on the satellite of some remote sun? Through what incalculable eons had its germ cells been drifting amid interstellar vacancy?

Concerning one fact, at least, there could be no doubt: the Glowworm Flower had actually originated outside the Earth. All the investigating scientists—and they were numbered by the hundreds—were at one on this matter, although they had few other points of agreement. The vegetation of the stars had, literally, been transported to our planet!

Had the Glowworm Flower not been curiously beautiful, and remarkable alike for its exquisite fragrance and its luminescence at night, it might eventually have passed out of view, except for the few specimens retained and studied in scientific laboratories. But, like many another treacherous thing, it allured by its loveliness, and soon had worked its way into favor in the salons of the well-to-do no less than in the gardens of common folk.

The cultivation of the Glowworm Flower had become a fad, a craze, a passion with thousands. As fast as the spores could be developed, the young plants were distributed. Special nurseries arose for that purpose; and at any point throughout the length and breadth of the United States, in Canada, in Mexico, and even in Europe, the traveler was likely to be greeted by the interlacing gray-green tendrils and un-Earthly rainbow-hued blossoms of the stranger from space.

Unfortunately—as it ultimately turned out—it thrived equally well in all climates, from the sub-polar to the tropical, and seemed to adapt itself to nearly every variety of soil.

IT WAS in May, 1977—after the Glowworm Flower had become fairly well established—that medical journals began to speak of a new disease that had invaded widely scattered localities. The symptoms, it appears, were fairly definite, although they varied in minor details from case to case; always it was the mind rather than the body of the victim that was affected. The sufferer would first undergo a period of ecstasy in which he would call out in wild joy, like an intoxicated man; then he would fall into a deep coma, from which no effort could awaken him for many hours; then, finally, he would come to himself, invariably with a tale of the most astonishing dreams and visions, surpassing those of the opium smoker.

As a rule, the experience would leave the patient greatly weakened, and he would be as long in recovering as though he had undergone a major operation; yet, invariably, his recuperation would be temporary only; after a few weeks, he would succumb again, undergoing a still more dread visitation of the mysterious malady.

A peculiar fact about the disease was that it seemed to affect only the more highly sensitive and intellectual elements of the population. Writers, artists, professional men, scientists, preachers, scholars, philosophers—all those whose innate gifts and minds required the development of a delicate nervous system—these were the ones that appeared most susceptible, whereas common laborers, street sweepers, truck drivers, and the like, seemed totally immune.

Naturally, physicians were alarmed—particularly as the disease was spreading rapidly. It seems incredible to us to-day that they did not immediately detect the cause; but the fact is that they either remained in doubt, or feared—not without reason—that the announcement of the truth would do more damage than good. At all events, it was months before the source of the ailment was

openly recognized, and meanwhile it was constantly claiming new victims.

The strangest thing about the affliction, according to all accounts, was the nature of the visions which the sufferer claimed to see. In all cases, he would describe a sensation as if he "had risen out of his body"; in all cases, he would refer to an intoxicating sense of flying through "tremendous spaces," through distances passing all computation. But, beyond this point, no two accounts agreed entirely, although they all had certain points in common: the description of weird far-off worlds, of comet-swept skies, of flaming galaxies and unfamiliar constellations, of suns and moons unknown to man, and of populated countries fantastic beyond belief.

To consider a typical account, here is the story of Dr. Francis Carlson, the British mathematician, who, as a hard-headed practical man, could scarcely have been expected to indulge in any vagaries of the imagination.

"MY FIRST FEELING," he wrote, "was one of great buoyancy and lightness, as though I had left a weight of scores of pounds behind me. Suddenly I seemed to rise in the air. A shadowy form, which I took to be my own lifeless body, was lying on the couch in my room. I rose through the walls and ceiling as though they did not exist, and out into the air over the house, which I could clearly see, then upward with a rocketlike velocity, until I had passed above the very Earth, and saw it diminishing beneath me like a shooting star.

"It seemed much later when I found myself on the surface of another world. Three suns glared brilliantly down upon me—one, near the northern horizon, of about the color of our own Sun, although less than a tenth as large; another, halfway down from the zenith to the south, of a sultry copperish red, and much less bright than the first, but

with fifty times its disk; while the third, of an unbearable pure-white radiance, was rising slowly in the west. There were also, I think, several moons, colored with shifting pinks, mauves and yellows, but these I did not notice particularly, for my gaze was absorbed in the spectacle beneath.

"The entire surface of the globe was covered with a bewitchingly beautiful foliage, with a jungle growth which, weaving its lovely gray-green tendrils in whorls and spirals to the height of great trees, displayed incalculable multitudes of the most resplendent flowers I had ever seen.

"Larger than a man's face, and more fascinating to behold than the most appealing woman ever put on Earth, each of the blossoms revealed shimmering rainbow-hued petals about a core of pure-white; each, like a sentient being, swayed and tossed gracefully, although no wind was blowing; and each exhaled an odor that it was heaven itself to breathe.

"Truly, I thought that I was in Paradise! And so enraptured was I that it was long before I even noticed the resemblance of these fairy blossoms to the Glowworm Flowers that had so delighted us on Earth.

"It seemed that a long time went by, while I floated gently, as if on wings, through long twilight corridors beneath the masses of gray-green tendrils. And there, among branching lanes shot through with shafts of red and golden and silvery sunlight, I encountered the most glorious folk I had ever beheld.

"Never speak to me of elves! No elf could be so blithe and airy, so spry, so nimble, so kindly, so radiant with laughter as these little creatures that, borne on dragon-fly wings, came singing toward me out of the forest of foliage. Only in the remotest way were they human—rather, they were more than human; they were like angels, like gods! Each, wrapped in a shimmering many-

colored gown like the robe of a humming bird, had the daintiest of arms and legs in addition to wings; each displayed long, flowing corn-colored hair, and eyes of an intense, an ethereal blue, set amid features iridescent with a thousand changeable tints. And the song that came from them all was to me as a heavenly chorus.

"Yet none of these strange people could have been, I think, over a foot in height. Indeed, judging from the lightness and ease of their movements as they curved and tossed and played and chased one another in air, I doubt if any of them was as substantial as a dove.

"They did not seem surprised to see me. Their melodious cries, as they approached, were as a carol of greeting. With a sense of encountering old and well-loved friends, I mingled among them; and, as I did so, I seemed to have been reduced to their size, and to partake of their qualities, and to dance and fit as one of them, and a sense of infinite well-being was upon me.

"There was one of their number—a frail and fragile creature, with eyes more deeply blue than those of her companions, and features that shimmered more brightly, and a gown of greater iridescence—who kept always at my side, and matched my every movement, until she seemed my breathing counterpart, and I was drawn toward her with a love that was wholly of the spirit. For we had no physical contact, and desired none, but wished only to float forever amid this world of endless light and shadow, of gray-green foliage and ambrosial perfume, and flowers more ravishing than a lover's kiss.

"A very long while seemed to go by; and we were ecstatically happy, and never ceased to glide through the singing groves. But there came a moment when a sadness burst upon me, and a weight seemed to press down upon my shoulders, and something clutched at my heart, and drew me away. My airy lit-

tle companion looked up at me with a speechless sorrow. In speechless sorrow I looked back. Suddenly all the light and the fragrance vanished, and I seemed to be far away, dropping back through the abyss of space.

"After a time, I saw the Earth below, and it rose to meet me, and I entered the heaviness of its atmosphere, like one who, from some realm of light and joyousness, suddenly plunges into a deep, dank tunnel. At first I saw my house beneath, and passed through the roof, and on a couch was the shadow that was my body, and with a strange clicking sound I reentered it, and awoke, feeling very weak and ill, and sadder at heart than I can say. But they told me I had been out of my head. None would believe my tale of the glorious world I had visited, and the word which they gave to all the radiance and the splendor was 'insanity.'"

IF THIS had been but an isolated story, it might not repay repetition at such length. But since Dr. Carlson's vision corresponded with that of thousands, it is important as showing the type of delusion common to all the sufferers from the new disease.

Naturally, the victims protested that their visions were not delusions, that they represented actual experiences. But it is well known, of course, that no lunatic has ever been made to acknowledge his own lunacy.

However, the remarkable uniformity of the accounts was without a parallel in the history of psychiatry—and, as a consequence, not a few independent observers argued for a serious basis for the visions. One fact, at least, came to be everywhere accepted after the period of preliminary confusion: that the disease had a single cause—a cause which was eventually identified as nothing else than the Glowworm Flower.

Soon after the discovery of the plant, it was revealed, one of the investigating

scientists had made the experiment of tasting a thick, sticky nectar that formed at the base of the blossoms. He had been the first victim of the disease—and had been rapidly followed by others, to whom he had secretly confided the nature of his ailment.

Through underground channels, the news had spread long before it had become publicly known; hence the victims began to multiply at an alarming rate. Men of a dull and strictly prosaic turn of mind, it seemed, were not especially endangered, for, upon sipping of the mysterious nectar, all that they would feel was a faint nausea; but the more sensitive and imaginative the partaker, the more completely he would succumb.

To cure the chronic user of morphine or opium was less of a task than to rescue the devotee of the Glowworm Flower; once having tasted, he would have no object in life except to taste again and again—and, indeed, it seems hard to blame him, since he had the sensation of experiencing a far more exhilarating and beautiful existence.

Nothing, however, could have been more deplorable than to see keen and creative minds wasting away in a drugged languor, to observe painters who had ceased to sketch, poets who had ceased to sing, musical virtuosos who had ceased to play, chemists who had turned from their test tubes, physicians who had abandoned their vials and stethoscopes, and judges who had deserted their law books—all in order to enjoy the magic trance induced by the Glowworm Flower.

To the practical and everyday world, the unanimous protestations of these deluded ones seemed as fantastic as the outcries of some fanatical religious sect. Who could believe that the afflicted persons were really transported in spirit to the planet of the Glowworm Flower's origin? Who could believe that they witnessed the actual scenes and en-

countered the actual inhabitants of some other sphere?

Yet this is what the victims of the disease firmly maintained; and to convince them of their error was impossible. Hence some of them were put behind the walls of institutions, where, in their madness, they would cry out for the Glowworm Flower, and would soon die if it were denied them; and others, permitted their indulgence, would go off into successively deeper trances, from one of which they would not awaken. The term of a man's life, it was found, would not be more than six months or a year, once he had succumbed to the fascination of the Glowworm Flower.

PUBLIC OPINION, usually slow in awakening, at last was fully aroused. Men everywhere became alive to the peril of permitting the ablest and most useful minds to be cut off by the mysterious invader from space; and it was conservatively predicted that, in less than a generation, the intellectual bloom of the race would be destroyed forever. Yet all prohibitions, all laws were futile. The curious among the uninitiated, and those already victims of the Glowworm Flower, could not be deterred by any penalties. In all countries, the death rate was rapidly mounting; within a year, the casualties from the new disease were said to be as numerous as those of a great war.

The only remedy, obviously, was to arrest the malady at its source: to eradicate the Glowworm Flower. At a hastily called international convention, representatives of every nation signed a pact calling for the extermination of the plant; everywhere the possession of it was made illegal, under the severest penalties, and tens of thousands of men were engaged to enforce the law and to see that every existing Glowworm Flower was uprooted and burned.

But alas, it was not so easy to drive out the invader, once it had taken pos-

session! The plant was bootlegged by profiteers who heaped up fortunes in the illicit traffic—and the most drastic punishments were required to restrain them. Worst of all, even after the law breakers began to be mastered, the Glowworm Flower was found to spring up voluntarily in scattered parts of the Earth—in farm lands and deserts, on mountainsides, islands and beaches. All efforts to control its spread appeared futile. Whether we desired it or not, it seemed to have settled among us to stay!

More than a year had passed before, amid the darkness of the world's despair, the International Investigating Commission was driven to make a radical recommendation:

"Let all interplanetary flights be ended! Each new expedition into space gathers a new supply of the spores, which cling to the car and scatter on reaching the Earth's atmosphere. Therefore the Glowworm Flower will be with us until space flights are abolished."

Naturally, there was a great outcry against so stern a proposal. Since the Reimers-Bayle expedition, space excursions had become popular; scores of parties had voyaged to the Moon and back, and plans were well advanced in their preparations for cruises to Mars, Venus and Mercury. Hence the prohibition of space travel seemed cruel and bitter to contemplate.

Yet the authorities, in their eagerness

to stamp out the menace, were ready to accept a lesser evil in return for a greater. With the consent and cooperation of all nations, and in defiance of world-wide protests, the licenses of all space pilots were withdrawn, and all apparatus for space flights was destroyed. And, from that time forth, the fight against the invading plant began to succeed.

To-day, after ten years, not one of the beautiful, strangely seductive blossoms remains anywhere on Earth, except for the few preserved in museums. There are still many who sigh in remembrance of its divine fragrance, its other-worldly loveliness. There are many who voice regret that, because of the plant, space expeditions should have been nipped in the bud. But, recalling how many of our best and wisest citizens sleep in untimely graves, we know that the measures we pursued, however greatly to be deplored, were the only ones open to us if the race was to survive.

Hence no words are more frequently quoted to-day than those of Dean Cameron Prince—unfortunately, so little heeded when first uttered! "Beware, gentlemen, before you attempt an interplanetary flight! Beware, not because you may not succeed, but because you may succeed too well!"

Truly, those were words of wisdom more profound than we could have known!

*If at first
you didn't try PABST
try again!*

PABST *Export* **BEER**
TRADE MARK

KEGLINED

BREWERY GOODNESS SEALED RIGHT IN

Part Two of The Cometeers

*A New Epic of the skyways and the
sequel to the "Legion of Space"*

UP TO NOW:

For want of a better word, the startled astronomers of the thirtieth century termed the invader a "comet." A colossal cloud of shining green, sharp-edged, impenetrable, it came out of mysterious interstellar space. Controlled like a ship—although it is twelve miles long—it halted in space, beyond Pluto.

Man's amazement changed to panic as unseen raiders—the Cometeers—invaded the system, and learned of Stephen Orco. Stephen Orco is the legion's most dangerous prisoner. A brilliant, mysterious rebel, mockingly defiant of all humanity, he is dangerous because he has learned the secret of AKKA.

AKKA is the symbol for humanity's secret weapon. Its user, with simple instruments, can destroy any object in the universe—by so altering the warp of space that neither matter nor energy can exist. The only possible barrier is the counterwarp of space, by which any master of AKKA can prevent the destructive use of the weapon.

Aladoree Star is the keeper of AKKA. Her son, Bob, is with her when her husband, John, comes with an order from the Green Hall, headquarters of the legion of space, to destroy the Cometeers.

Before doing so she is interrupted by Jay Kalam, commander of the legion of space, who withdraws the order. He is going to take the Invincible—newest and most powerful of the legion's space

ships—and visit the Cometeers. If he does not return in twelve days, they are certainly enemies and must be destroyed.

In the meantime, John Star is to take Aladoree to some even more secret and secluded place. Bob goes with Jay to enter the service.

Jay explains to Bob that Orco surrendered to them only on the guarantee that his life would be spared. He made an exception of only one individual who was free to kill him if he could: Bob Star.

Bob, in turn, explains to Jay that there is a personal score to be settled between them. While at the academy of the legion of space, Orco burned Bob's brain with an omega-ray projector. Each pledged, then, to kill the other. But Bob never recovered from the burning pain, and with it came an obsession against ever killing any man.

Now Bob must face this man—with the intention of killing him. His continued existence holds a menace for the entire system.

VIII.

THE *Invincible* drove down toward the south pole of Neptune.

The eighth planet, 2,800,000,000 miles from the Sun, receives a thousand times less solar radiation than Earth; and only the heat of internal radioactivity prevents its very air from falling as everlasting snow. Radiation turns its atmosphere to freezing, never-ending fog.

by JACK WILLIAMSON



"It came across the floor, to the precious generator. The green-white mist swirled out—reached into them—"

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Despite the vast size of the planet—its diameter is 30,000 miles—a low, mean density results in a surface gravitation nearly equal to that of Earth. And the planetary engineers had made life possible there, oxygenating the atmosphere and building heated, insulated cities over the rich mines in the equatorial belt.

But the eternal winter dark of the south polar continent had defied even the engineers. A waste of frozen desert, utterly lifeless, larger than all Earth, it spread a blank, white area upon the interplanetary charts, marked: Uninhabited, perilous, shipping keep clear.

The *Invincible*, however, descended toward the center of it, through greenish, freezing clouds. Bob Star and his two old guards set foot upon a flat, frozen plain. Giles Habibula's squat bulk, as always, seemed about to burst the seams of his plain green uniform. Hal Samdu was still the rugged-faced giant, gaunt and powerful, proudly glittering with the decorations he had received for his part in the historic raid to Yarkand.

Already shivering, they ran away from the air lock. Rockets thundered behind them; ghostly in the fog, the ship quivered, slid forward. They dropped flat to escape the hot, blue hurricane of her exhausts. A moment, and the blue glare was fading in the clouds; thunder became a far-off whisper, ceased.

The *Invincible* had carried Jay Kalam on his risky mission to test the good will of the Cometeers.

A squad of legionnaires came down, challenged the three, examined Bob Star's credentials, and guided them to the strange fortress on a low and barren hill, the hidden prison of Stephen Orco.

They were almost upon it before Bob Star could see anything; then, abruptly, a vast and massive wall loomed above them in the fog.

"The wall is ring-shaped, sir," the officer informed him, extremely respectful since he had seen the signature of Jay Kalam himself upon Star's papers. "There's a circular rocket field inside, where our four cruisers lie. You don't see the real prison at all; it is a buried cylinder of *perdurite*. Merrin's cell is a thousand feet below the field."

A ponderous, armored door admitted them to the wall's hundred-foot mass. Bob Star immediately asked to see the prisoner. And at last, beyond confusing, narrow passages walled with gray *perdurite*, behind huge cylindrical doors, massively locked, beyond hidden elevators and grimly alert guards in turrets of *vitrlith*, he looked upon the man whose very life was a threat to the existence of humanity.

A HUGE DOOR let him into a square, bare little room, where two sentries watched. Its farther wall was a shining mass of *vitrlith*. Beyond that impregnable transparency was Stephen Orco's cell. Clear, soft light flooded it, and it was furnished comfortably.

Beside a tall, frosted glass of scarlet wine, the prisoner sat in a big chair, reading. His gigantic, splendid body was relaxed in a green dressing gown. Bob Star could see the angle of his handsome face, the light smile that clung to his big, womanish mouth.

"This is Merrin, sir," said the officer. "He was sealed beyond that wall of *vitrlith* when the prison was built, two years ago. No one has held any communication with him since. The cell is soundproof. All metal objects have been kept from him. Air, water, and liquid food are pumped to him through screened tubes—"

He broke off to indicate a small red button on the gray wall beside them.

"I must warn you, sir. The red button would flood the cell with lethal gas. I thought I should tell you, for we have

orders to preserve his life as a sacred trust."

Bob Star scarcely heard the last words, above the sudden, confused ringing in his ears. Abrupt sweat chilled his body. He swayed with faintness. The red disk stared at him, a sinister eye.

He had just to touch it—that was all. And the score of nine years would be settled. An intolerable burden would be lifted. Even the old pain, he felt, would die; and the haunting fear would go—

He was aware, then, that Stephen Orco had seen him. The blue eyes, cold and burning with a reckless defiance, had come up from the book. The handsome face smiled mockingly. The prisoner got to his feet and strolled to the transparent, unbreakable wall. He pointed at the red button, and slapped his leg with silent merriment. His full, dark lips moved to some derisive, soundless greeting.

Bob Star felt a sudden desire to speak to him. This was their first encounter since that night of pain. Perhaps his fear was just a mental complex born of torture, an illusion that a few words might dissolve.

Yes, said the officer, there was a telephone, but its use was forbidden.

"I will speak with him," said Bob Star.

AFTER a conference with the commandant, it was arranged. Bob Star was left alone in the square, gray room, and a magnetic speaker thumped.

The clear, rich baritone of Stephen Orco came to him, carelessly: "Greetings, Bob. I've been amused at your efforts to put your finger on that little button."

Bob Star's white face set. He rasped: "I'm going to do it."

"You won't do it, Bob. I know the effect of the omega ray upon the tissues of the brain. No, I've never been afraid

that you will kill me. And I know that no other will—because of a foolish code the legion has."

Bob Star braced himself, forced one hand a little way toward that malicious red eye. But the old fear yelled, *you can't*—A numbing chill struck down his hand. He staggered back, his shoulders sagging with defeat. Tears stung his eyes; his hands knotted impotently.

"I'm really glad to see you," Stephen Orco was saying, smiling. "Because you must have been sent here with the ill-grounded hope that you could destroy me. That means that my already rather fantastic defenses are considered inadequate. I conclude therefore that I have powerful allies outside, and that I may hope shortly to be set free."

"Not if I can prevent it," said Bob Star, grimly.

"You can't, Bob. I've beaten you." Bob Star was amazed at the black hate that peered suddenly through that smiling levity. "I've broken you!"

The voice was abruptly lower, hoarse, monstrously evil.

"When first I knew of you, when we were children, it filled me with fury to think that an incompetent weakling, without any effort of his own, should one day become the most powerful of men—while I had nothing. I then resolved to crush you, take your heritage for myself."

Stephen Orco paused. His wide mouth lifted in a sudden, brilliant smile of satisfaction, and his tone was light again when he resumed: "You were easy to break, Bob. That night in the laboratory, the ray killed all the danger in you. For a time I was disturbed by ethical questions, though now they are clear enough. Consider it this way: one of us has AKKA given to him, the other must find it by his own efforts. Which better deserves it?"

"The keeping of AKKA is not an advantage," whispered Bob Star, faintly.

"It is a duty to mankind. But how—how did you find it?"

The prisoner smiled patronizingly.

"I shall tell you, Bob," he said, "if only to establish the superiority of my right, and the justice of what I have done—and shall do. I followed the method of investigation that should have suggested itself to any person of intelligence. I collected the data available, formulated hypothesis, tested them by experiment, developed my conclusions.

"I secured access, at the academy, to a secret library, and studied there all existing accounts of the use of AKKA, from the discovery of it by Charles Anthar—when he was in prison as I am.

"The last use of the weapon had been to destroy Earth's old Moon—after the invading Medusæ had seized it. With my foster father's space yacht, I searched the orbit of the lost satellite, until, at last, I found three small metallic buttons.

"No larger than the end of my thumb, they were all that remained of the Moon. I have since realized how singularly fortunate I was to find a single atom. It was only because your mother was working hastily, with a crude instrument, that a tiny remnant of heavy, refractory elements escaped complete annihilation.

"Some months of careful work, with ultra-microscope, spectroscope, radio and chemical analysis, among other means, revealed the nature of the partial effect of AKKA upon the specimens. From effect to cause was a matter of mathematical reasoning. It remained but to test alternative hypothesis, and elaborate the surviving construction—and I was master of AKKA."

Bob Star stood voiceless until he sighed and relaxed, saying: "Don't such abilities merit reward, Bob? I am certainly the most gifted of men; reason assures me that I am therefore their rightful ruler. And I should have been

that, already, Bob—but for my blunder."

Hoarsely, Bob Star whispered, "What was that?"

With a bright, careless smile, Stephen Orco replied: "I should have killed your mother, Bob. Then I should have been able to use the destructive force of AKKA. The blunder put me here." His lithe shoulders shrugged. "When I am free, I shall not repeat it, Bob. I'm not afraid to tell you, for I know you can't touch that button—even to save your mother's life."

IX.

WEARILY, Bob Star rapped on the metal door, and had the telephone cut off. With the prisoner sealed again in his tomb of silence, he remained alone in the little outer room, grimly resolved to stay there until the crisis came—if it must come.

Stephen Orco had calmly returned to his chair and his book. He relaxed in the green robe, sipping the scarlet wine, apparently oblivious of Bob Star miserably hunched on the hard bench outside.

Twice again Bob Star had tried all his faculties in an effort to touch the button. But no force of will seemed able to erase the mark of that flaming ray. At last he abandoned the attempt for the time, desperately hopeful that the grim stimulus of emergency would aid him.

His blue eyes, as he sat there, narrowed abruptly. His breath sucked in, his lean hands clenched. He leaned forward on his seat, staring at the gray wall. For its surface had begun to shimmer with vague, moving shadows.

The metal door was still locked behind him; the alarm gong was silent. There was no hint of another presence in the room—only the creeping shadows on the wall. He watched, breathless.

A blue, misty circle flickered against the gray. Ghostly shadow forms darted through it. Abruptly then, as if some unseen projector had come suddenly into focus, it melted into an amazing scene. Swiftly, his first bewildered mistrust of his eyes was burned away by the vivid wonder of what he saw.

He looked into a curious chamber, sunk like a niche into the gray wall. Its hollow surface followed tapering spiral curves. It was singular, absolute black, spangled with small crystals of brilliant blue, that were various as snowflakes.

The girl stood upon a many-angled pedestal of blue transparency. Its cold sapphire flame burned up against the oddly curving walls, writing fantastic runes of flame in the tiny flakes of blue.

Against darkness and blue flame, she was vividly white. Her wide, solemn eyes were brown, golden-flecked; her black hair glinted with red. One slim white arm was thrust out toward him, and upward, in an arresting gesture of warning. The pale oval of her face was grave with the expectation of danger; her bright lips parted as if she spoke some warning word.

In bewildered fascination, Bob Star came up like an automaton from the bench, and started toward her. She stopped him with an imperative gesture.

She pointed through the panel of *vitrilith*, at the oblivious Stephen Orco. Then, keeping her regretful, yet determined, golden eyes on Bob Star, she thrust a slender finger again and again at the button on the wall.

Bob Star made a little motion toward it, and stopped with a helpless shrug. She had plainly told him to touch it—but that ancient fear still chained him. He turned back toward her, with sick misery on his face.

Her face became a pool of tragic resignation. A light died in her golden eyes. Then, abruptly, she started, as if to a silent voice. She looked away

through the gray wall. Her slender body quivered in the white robe, grew rigid.

Her bare arms made a quick, little impulsive gesture of compassion toward Bob Star. He started forward, and again she stopped him, gesturing at the red button imperatively, desperately, hopelessly.

THEN, as she made a fleeting little gesture of farewell, a bomb of cold flame exploded in the blue pedestal. Sapphire light swirled up against the crystal rime upon the spiral walls. Her gentle, tragic beauty was wrapped in supernal fire. Blue radiance filled the niche, and died. A blue shadow faded from the gray wall.

Bob Star was alone in the silent room.

He swayed, trembling. Tears burned his eyes. He flung his head and looked at Stephen Orco, who was just setting down his empty glass, still absorbed in the book.

His mind was roaring confusion. Was she real? Was she real? All wonder in him had been suspended, but now the question hammered at him. Reality? Or hallucination born of the conflict of fear and effort in his tortured mind?

He jumped, when the gong shattered the silence in the room. Harshly, from a speaker beside it, rasped a hoarse command: "Emergency stations! Seal all doors! Stand——" The voice choked strangely. A ragged whisper gasped, "Quick! Invisible things—— I can't see——"

Now! breathed Bob Star. He must do it now, or doom the system. Fighting a numbing inertia, he took a halting step toward the gray wall. The red button winked at him, like a mocking eye. He was aware that Stephen Orco had laid aside the book, was watching him with careless amusement.

He took another jerky step. Abrupt

sweat chilled him. His ears were roaring again. With mounting blows, the old pain shocked every fiber of his tortured nerves.

"Stop!" shrieked fear.

He set his teeth and took another step, clinging to his picture of the girl, finding a strength, a new courage, in her brown eyes.

Something was wrong with the light; it was turning green. Or was there a green light shining through the wall? He must hurry. There were only two steps more— A green mist had flooded the room—or was it in his eyes? The gray walls swam. The red button winked at him out of the haze, maliciously.

His skin prickled strangely. New numbness stole over him. Stiffness seized his limbs. He thrust out his arm—or tried to. He could no longer see or hear. He no longer had a body. He didn't know when it hit the floor.

Abject misery clung for a moment to his disembodied mind. He had failed the brown eyes. The old fear had beaten him, the red hammer of pain, and something else he didn't understand. Then even the sickness of despair was gone, before overwhelming darkness.

X.

MUTTERED THUNDER of descending rockets woke Bob Star. Bitter cold was settling into his stiff limbs, and his eyes opened upon oppressive green twilight. His body lay sprawled upon frozen soil, yet stiff with the queer, tingling numbness that had robbed him of consciousness.

Groping dimly for recollection, he had the disturbing sense that the gap in his consciousness contained something unthinkable hideous—something that his mind had sealed away, to preserve its sanity.

Then the dreadful sense of failure came back, a slow, sickening wave. He

lay for a time in utter apathy, until the increasing sound of rockets penetrated his mind again. He gulped cold air into his lungs, then, and sat up.

He was bewildered to find himself on the brink of an appalling chasm. The flat, barren plain broke before him into a sheer abyss of greenish darkness. Floor and farther walls were lost in a misty infinity.

The scrape of a foot drew his glance, and he saw Giles Habibula and Hal Samdu behind him, staring up at a vague blue glow that flickered through ragged wisps of green-black cloud.

"Aye!" boomed the giant. "'Tis a ship!"

"Ah, me, 'tis time," came the familiar plaintive tones of Giles Habibula.

"Giles," Bob Star called weakly. "Where are we? What's happened?"

"Lad!" The thin voice reflected surprised relief. "We thought you would never wake, until you died of cold."

They lifted Bob Star to his feet. Clinging to Giles Habibula, he felt a little sob of gladness.

"Ah, 'twas an age of mortal evil—"

"That pit?" said Bob Star, still tormented by the dread that had shadowed his awakening. "Tell me—"

"The pit is where the mortal prison was." The old voice was a thin rasp of dread. "After the raiders had taken the prisoner away, a red light shone down from the invisible ship. And the walls flowed into red liquid. The very blessed ground turned to red fire, and sank away. Ah, the pit is all that's left of the prison and the garrison, lad. 'Tis a mortal mile deep!"

"So he's gone," whispered Bob Star. "I failed, and they took him away."

HIS MIND was numbed anew with the overwhelming consequences of his failure. Dull, incurious, his eyes followed the blue glare of the rockets that roared above, sinking and shifting in the clouds.

"'Tis landing near," said Giles Habibula, gratefully. "At last we are saved—"

"Tell me what happened," demanded Bob Star again. "How does it come that we are alive, when all the rest are dead?"

"The prisoner spared you, lad, and us with you. He told us he was the rebel Orco, whom the system thought dead—but you knew that.

"Hal and I," he amplified, "were waiting for you outside his cell. Of a sudden my poor old nerves were shocked by a frightful alarm. Gongs were ringing, men running, half-clad, to their stations.

"Then I saw the blessed men begin to fall, lad. And a green mist dimmed my own old eyes. My poor, ailing body failed me. I went down helpless with the rest, and so did Hal.

"Yet for a time I clung to my old wits, when all the rest knew nothing. I heard the clatter of locks, and saw the great doors revolving. Then I heard some mortal creatures passing through, though I could not see them.

"Presently the prisoner Orco came walking out of his cell, speaking and making gestures to creatures I could not see. They answered him with hootings and boomings from the empty air. And your body was following him, lad, floating—carried in unseen arms.

"The prisoner pointed to Hal and me. The invisible creatures lifted us, and we were carried helpless out of the prison. Little I remember, until we were all lying out here upon the frozen ground. Near us was some great ship—it was invisible, but I could hear machinery and the clang of valves.

"Then the prisoner, now himself invisible, spoke near me.

"You are Giles Habibula, the pick-lock?" he said. 'I bow to the fame of your accomplishments.' He laughed a little and said, 'I think we are brothers.'

"Then his voice went dark with hate.

'I understand that your unfortunate master will presently recover,' he said. 'Tell him that I have spared his life—in return for sparing mine.'

"He laughed a black, hard laugh. 'Tell him that you three are the only men alive on this continent. It is five thousand miles to the sea, and nine thousand more to the Isle of Shylar. I fear he won't live to reach it—but he will live long enough to know that I have won.'

"He laughed again; it was a mortal ghostly sound in the empty air, lad. He said, 'Tell Bob I go to seek his mother.'

"A valve clanged then, lad. Creatures hooted and boomed. The green fog swirled, and the invisible ship was gone. I found two long, straight groves in the soil, where it lay.

"Then a cold, pale-red light shone down from the clouds. 'Twas a fearful thing, lad! The fortress melted into a red and flaming liquid, and that sank away, until this fearful pit was burned into the blessed planet."

HE SHIVERED.

"Mortal me, the Cometeers are fearful enemies! 'Twere better if the rocket hadn't come for us. If we live to leave Neptune, 'twill be only to see mankind crushed and destroyed."

"Do not say it, Giles!" boomed Hal Samdu. "If we live, it will be to fight for the system and Aladoree. Come! We must seek the rocket, before it goes and leaves us."

The glaring rockets had vanished in the clouds, but Bob Star had felt a faint shock when the ship struck the frozen plain.

"It landed too hard," he whispered anxiously. "It may be injured."

They stumbled shivering through the fog, around the ragged lip of the chasm. A shattered and riven mass of wreckage loomed at last before them. Bob Star sank into apathetic despair.

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"Mortal me!" sobbed Giles Habibula. " 'Tis no more than the tenth of a ship! 'Tis but the nose of some blessed cruiser. 'Twill never serve to carry us out of this mortal waste. We shall freeze and die here, as the prisoner intended——"

Bob Star was looking dully upward. Great plates of armor were twisted, blackened. Ports were shattered. Rocket muzzles projected at grotesque angles. A colossal proton gun had been hurled from its turret.

Then his heart came up in his throat. He staggered back, dazed. He swallowed, whispered: "The *Invincible*——"

A cruel, iron band grew tight around his chest; he could speak no more.

Sick despair descended anew. If the *Invincible* had been destroyed, it meant that Jay Kalam's gesture of friendship had failed. It meant that the Cometeers were enemies—and now, since Stephen Orco was free, they could not be destroyed with AKKA.

XI.

"AH, SO," said Giles Habibula, bitterly. "'Tis a miserable fragment of the great *Invincible*. Alas, poor Jay! 'Tis, no doubt, his coffin——"

A faint hope kindled in Bob Star.

"The rockets were working when it fell. He was fighting for his life. Perhaps he's still alive."

"Not in such a fearful wreck," said the old man, wearily.

Yet it was he who came forward, when Bob Star and Hal Samdu had failed to find entrance to the intact section of the great hull.

"Lad," he asked, "you say the forward valve is clear?"

"It is," said Bob Star. "But locked."

"Then help me reach it, lad," he pleaded.

They aided his trembling ascent into the wreckage. He clung before the valve, peering in the darkness at the lock.

"Ah, me!" he muttered sadly. "Why must they lock up a fighting ship like a blessed safe? Ah, but it speaks ill for the courage of the legion."

But Bob Star, watching, marveled at the deft, quick certainty of the thick fingers. He was hardly surprised when the lock snapped and whirring motors began to lower the outer valve.

"Do you know, lad," the old man wheezed triumphantly, "there's not another in the whole blessed system who could master such a lock? But come, let us search for poor Jay."

The bridge room was dark and empty. Upon the log strip was the neatly printed legend:

Wreck falling toward south pole of Neptune. Will attempt to land at Merrin's prison. General order: The Cometeers are enemies, and the legion will fight to the end.

KALAM.

Hal Samdu's great voice was booming:

"Jay! Where are you, Jay?"

"In his den, of course!" Bob Star exclaimed abruptly. "It is soundproof."

He ran through the chart room to the little hidden door, rang, and waited. It flung abruptly open. Golden light poured out. A tall, lean man in the green of the legion stood in the doorway. The surprise on his grave, dark-eyed face gave way to sudden joy.

"Bob!" his soft voice exclaimed. "Hal! Giles——" His voice broke. "I thought you must all have perished."

He brought them into the luxurious, rich-hued simplicity of the long hidden room, and closed the door. They relaxed to grateful warmth, and he found them hot food.

"I tried——" Bob Star burst out suddenly. "I tried, commander!" He set down a steaming bowl, unable to swallow. His lean face twisted with black self-reproach. "And I couldn't!" His voice was high, savage. "I'm just a coward——"

GRAVELY, Jay Kalam was shaking his dark head.

"Don't say that. I suspected that you might be unable to do it, yet I wanted you to have the chance, partly for your own sake. Your incapacity is due apparently to an actual injury to the tissues of the brain. Don't blame yourself for it—"

"I tried!" Bob Star broke in, wildly. "And almost I did it, commander! But I failed—and now he's free to murder my mother, and lead the Cometeers against the system. And it's all my fault—"

"No." Jay Kalam's voice was troubled, yet decisive. "If there is a fault, it is mine, for holding a standard of honor too high. Remember, my word is all that has preserved Stephen Orco's life. And it was only my mistaken sense of magnanimity that stayed the order to destroy the comet."

"You're sure," whispered Bob Star, white-faced, "that it should have been destroyed?"

The commander nodded grimly.

"The Cometeers are absolutely ruthless, completely devoid of the high qualities I had hoped for. The attack upon the *Invincible* was needless, unprovoked, wanton. But let me tell you!"

He plunged into a swift account of the catastrophe.

"Three hours after we left the prison, the telltale flashed red. The gravity detectors betrayed an invisible object of fifty thousand tons, following us from Neptune. In the hope of setting up friendly communication, I ordered the heliograph room to flash a series of signals.

"At the first flash, a terrific force caught the *Invincible*. The geodynes were helpless against it. We spun like a toy boat in a whirlpool. Like a pebble on a string, we were drawn toward the unseen craft.

"Can you conceive an invisible beam of force, Bob—what a mathematician

might describe as a tube field of etheric strain—strong enough to drag the *Invincible* against her fighting geodynes, five thousand miles in five minutes? That's what happened.

"Then a red light burned for a moment among the stars—aboard the invisible ship. And the *Invincible* was destroyed. All the afterpart of the vessel shone dull-red, melted into shining red liquid, vanished—"

"Aye," muttered Hal Samdu. "So was the prison blotted out."

"An atomic effect, it must be," speculated Jay Kalam. "The atoms couldn't be disintegrated—there's too little energy released. Perhaps the space lattice is simply collapsed, with a residue of impalpable, neutronic dust—"

He jerked his dark head, came back to the narrative.

"Forty men were left alive with me. I made no effort to stop their rush to the life rockets. The vortex gun was wrecked; we couldn't fight. I remained aboard alone.

"The six rockets made a little fleet, headed back toward Neptune—a little swarm of blue stars, dwindling in the dark of space." His eyes closed as he paused, as if with pain. "They had gone only a little way," he said huskily, "when that red light burned again. They all shone red and vanished."

Hal Samdu's big, gaunt face flamed with anger.

"They killed men of the legion?" he asked. "When they couldn't defend themselves?"

Jay Kalam nodded grimly.

"That is our measure of the Cometeers—and of Stephen Orco. For he was aboard the invisible ship; those men were doubtless murdered with his approval."

Bob Star's hands jerked into quivering knots; his shoulders came straight. Grimly anxious, his voice rasped: "Which way did they go, commander?"

"As far as I could follow them with

the detector, Bob, they were still headed toward the comet."

"We must follow." Bob Star's voice was quietly deadly. "Stephen Orco must be destroyed."

"He must," said Jay Kalam, wearily. "That is why I struggled so to save my life, as the wreck fell."

"Ah, so," said Giles Habibula, with admiration. "And it must have been a mortal bitter fight, you alone in less than half a ship."

"But it's a small chance we have," put in Bob Star hopelessly. "The only men on the whole frozen continent, without a ship——"

Hal Samdu broke in, "Bob, we aren't the only men."

"What!"

"Ah, so, there are others—enemies!" wheezed Giles Habibula. "In the mortal confusion of disasters we had not told you, lad.

"Twas while you lay unconscious beside the pit. Some stranger came through the fog, muttering and snarling like a beast. Thinking him a chance survivor of the garrison, I called out to him. He flashed at me with a proton gun. It went wide, thanks be to the fog. Then Hal flung a rock, and the stranger fled, whimpering like a hurt animal."

"Eh?" Jay Kalam had leaned forward, a new light in his dark eyes. "You're sure he wasn't from the prison?"

"That I am, Jay. I saw his face in the light from his gun. It was bearded. He was an unkempt, shaggy brute, clad in tattered scraps of cloth—no trim legionnaire."

"Strange." The commander whistled softly. "I wonder——"

XII.

BOB STAR paused in the foggy dark. The light tube wavered in his quivering hand, flickered away across

the barren, rugged plateau, and came trembling back to the thing that had stopped him.

"Lad," Giles Habibula whispered fearfully, "what have you found?"

Jay Kalam and Hal Samdu came up beside them in the frigid, greenish mist.

The four stared down at what lay in the light: scattered garments, torn, bloodstained, flung carelessly over the ashy soil; a little dark pile of viscera, frozen; a few large bones, stripped; the fragments of a skull, to which short yellow hair still adhered, burst, scooped clean of brains.

"This green," whispered Bob Star, picking up a torn sleeve. "The legion uniform——"

"Ah, so!" It was a ragged wail of fear. "A poor soldier was eaten here by some mortal creature of the dark. As we may be——"

"A legionnaire who strayed from the garrison, perhaps," speculated Bob Star.

Jay Kalam picked up a bright, blood-splashed little object, held it under the light. It was an enameled pin of white metal, a vivid-colored bird clutching a minute, inscribed scroll. The commander's breath came out between pursed lips, silently.

"No," he said, "this man didn't come from the fort. I knew him." His low voice drifted back into time. "He had pale, timid, blue eyes, under that yellow hair and his voice was soft as a woman's. He used to paint pictures—dainty little landscapes; he wrote jingling verse. A queer, violent fate that cast away the bones of such a man on frozen Neptune——"

Bob Star whispered, "Who was he?"

"Justin Malkar, his name was—his men called him sometimes, behind his back, Miss Malkar. But for all his effeminacy, he was an efficient officer in his mild, thorough way, and his crew admired him enough to give him this pin, the last time they called at the base on Earth.

"He liked it. He was weak as a woman for anything brilliant, flashy or——"

Gravely, the commander laid the pin on a little rock beside the scattered remains, and turned thoughtfully away before he plunged into a brisk reply to Bob Star's question.

"He was captain of the *Halcyon Bird*. He and Stephen Orco were the same rank, the year they were ordered to the Jupiter Patrol. But Orco already dominated him, and when the revolt came, Malkar was one of the first to join. He wasn't a bad man; Orco simply understood and used his peculiar weaknesses.

"When the rebels surrendered, the *Halcyon Bird* was missing. We soon found that one Mark Lardo, a wealthy Callistonian planter who had been Orco's chief lieutenant, had fled upon it. We scoured space for the missing ship, but this is the first trace——"

He looked back at the gleam of the pin on the rock.

"But what," Bob Star's voice was gray with horror, "what could have attacked him?"

"I think we shall know the answer," said Jay Kalam, "when we find the bearded stranger."

He looked down at the white, illuminated face of the tiny gyrograph in the palm of his hand. Fumbling for the stylus, he made a notation on the record strip.

Then, pressing a stud and reading numerals from the glowing dial, he said: "We're seven miles, now, from the wreck. This is the first clue. We must be near what we're looking for. We shall circle——"

"Ah, so," said Giles Habibula. "Let's be moving, before we freeze and die, and lie here to be eaten——"

THEY tramped away. Bob Star shivered from the penetrating fog. Again the eternal twilight quenched his hope. It was no use, he told himself.

It was a timeless world, this desert of endless winter dark. Nothing ever happened——

Three days before, while they were still within the ivory-walled comfort of Jay Kalam's long, hidden room upon the wreck, he had asked: "We can't signal for a ship?"

The commander shook his head. "The signal house, amidships, was destroyed, with all the spare equipment in the stores."

"But we must have a ship." Bob Star looked at Jay Kalam suddenly. "We couldn't build anything that would fly out of this wreckage?"

The commander smiled briefly.

"The rockets weigh two hundred tons each, Bob," he said. "Rather heavy for us to handle. Besides, the delicate parts of the injectors and firing mechanisms must have been pretty well smashed."

Bob Star's hands clenched.

"What possible way——"

"We must search, I think," said the commander, "for the stranger in the fog. If he isn't a member of the garrison, he must surely have some private means of communication. Anyhow, I see no more promising course of action."

And for three timeless, frigid days, they had been stumbling through the misty dark.

More hopeful, yet with new apprehension, they went on from the remains of Justin Malkar. Dark fog breathed upon them with the breath of death. Bob Star led the way around crumbling boulders, up frozen slopes, across midnight declivities, as Jay Kalam, watching his glowing instrument, softly called directions.

The plateau remained bare of any other mark of life or man. Bob Star was trembling with cold, reeling with fatigue and hunger, when Jay Kalam said: "Swing to the left, Bob. We can't go any farther——"

"Ah, thank you, Jay," gasped Giles

Habibula. "I feared you would never turn, until we died."

"Yes, commander," said Bob Star, fighting sick despair. "But there's a big boulder to the left——"

His voice stopped, with a little eager catch. He strained his eyes. The thing was vague, ghostly. He tried his light tube again, although he knew that it was burned out, useless. Breathless, he stumbled nearer.

The shimmering shadow took on reality. His heart leaped against his ribs. The thing was a cylinder of gray metal, fifteen feet through, eighty long. He made out the black ovals of observation ports, the bulge of a gun turret.

"Bob?" called Jay Kalam.

Bob Star stumbled back toward him, whispering urgently: "Quiet! There's a ship. They will hear——"

His words were cut off by a beam of blinding light that struck against a rock beside them.

"A searchlight," he gasped. "They heard! Get down——"

They tumbled flat, scrambled swiftly for cover. The protecting bulk of stone was stabbed abruptly with a sword of violet flame, riven. Fragments of incandescent rock splattered from it.

"Bob," whispered Jay Kalam. "Giles. Hal. All safe?"

"Aye, Jay," rumbled Hal Samdu. "But where are the others?"

"Bob!" called the commander, louder. "Giles!"

But frozen Neptune made no reply.

BOB STAR, standing nearest the ship, barely escaped the hissing violet blast of the great proton needle. Electricity transmitted on ionized air hurled him to the frozen soil, momentarily dazed, paralyzed.

He saw the slender needle swinging down, still faintly glowing, a spectral finger of death. Desperately he rolled over, and began to drag himself toward the ship. The gun reached the bottom

of its arc, violet flame spurted again. Rocks exploded behind him, but the shock reached him only faintly.

Crouching, safely beneath the needle, he ran to the gray hull. He slipped back to the valve. An instant's inspection told him that it was locked from within, impossible for him to open.

The nameless oppression of the Neptunian night sank into him once more. Then he started.

"Lad! Where are you, lad?" It was Giles Habibula, frightened. "Mortal me!"

Bob Star saw him creeping swiftly toward him.

"Ah, lad!" It was a bitter sigh. "We're trapped, against the mortal ship. The light blinded me. I ran in the wrong direction."

"Here, Giles!" Hope caught up Bob Star again. "Can you open this lock?"

"Wait a moment." He fumbled in his great pockets. "Ah, here it is—the bit of wire that let us into the *Invincible*. But why, lad? We two cannot storm a ship!"

"Open it," begged Bob Star. "Hurry!"

"Ah, if I must. But the folly is on your own head, lad.

"Strange are the wheels of genius, lad," he said, already busy with the lock. "Never could I use my gift in peace and comfort. It sleeps till the scream of danger rouses it. It is ever sluggard, without the tonics of darkness and haste or——"

Motor within hummed softly, the valve was swinging downward.

"Well!" He retreated hastily. "'Tis your own folly, lad!"

Bob Star sprang into the open chamber. Quick, cautious footsteps were approaching along the deck within. He flattened against the curving wall, caught his breath. The blunt nose of a proton gun came into view.

Few such situations had been neg-

lected in Bob Star's very thorough course at the legion academy. And he was master of all he had studied—until it came to the very act of killing. It was only then that the mounting pain of the old scar staggered him, that the fear born of the ray came screaming to seize him.

He caught the weapon and the hand that grasped it. His quick tug brought a burly, bearded man to his knees within the little chamber. He was twice Bob Star's weight, rugged, powerful; yet quickness told, and the skill of long training. A last thrust found a nerve in his neck; he collapsed, with a final, shuddering shriek: "Don't—"

Bob Star tumbled him out of the valve.

"Giles," he called softly, "a prisoner for you."

HE RAN BACK within. Silence met him on the curiously littered deck. The bridge was deserted, the floor scattered with torn, neglected charts. Doors to the cabins swung open upon dusty disorder. The air reeked of stale food, decay, filth.

He climbed into the gloom beneath the blazing searchlight, and found the turret empty. The man he fought had been alone. He returned to the air lock and called:

"Commander, the *Halcyon Bird* is ours."

The prisoner, recovering in the icy mist, was screaming: "I am Mark Lardo. I can pay for my life; I can buy food!"

Bob Star and Jay Kalam, twelve hours later, were in the small bridge room. Disorder had vanished. The mutilated charts had been gathered up. Bob Star was cleaning and inspecting the scattered instruments.

Hal Samdu, who had been clearing the rubbish from decks and living quarters, entered to report: "Jay, the

prisoner in the brig is howling like a wolf."

"He's insane," said Jay Kalam. "And not much wonder. We can't do anything for him. Have you finished?"

"Aye, Jay, she begins to look again like a proper legion cruiser. Have you learned yet how she came to be here?"

The commander's eyes fell briefly to the torn, stained pages before him.

"Justin Malkar's log," he said, "gives the outline of the story. It seems that Malkar wanted to surrender on Callisto. Conscience had overtaken him; he was ready to pay for his treason with his life.

"Mark Lardo, however, came aboard with a dozen of his armed henchmen, and forced him to start on the flight to Neptune. Departure was hurried. They were short of fuel in the beginning, yet there seems to have been enough to have made the voyage.

"Malkar's entries are a little obscure, yet it is quite plain that he drove the ship off her course, deliberately wasting fuel. The cathode plates were exhausted before deceleration of space velocity was complete, and it was necessary to use all the rocket fuel, to prevent a crash into the planet.

"Until the end, Malkar let his companions believe that they would land safely on the Isle of Shylar—he could have taken them there, just as easily. He records their consternation with evident satisfaction, together with the fact that the food aboard was sufficient to last only a few months.

"His last entry is an odd, jingling little *Ode to Justice*."

He turned a soiled, mutilated page.

"The rest we must read for ourselves. Somehow, as the food ran low, Mark Lardo got his twenty-two companions outside—perhaps he reported a rescue ship landing near. Anyhow, he locked them out to perish."

"The remains we found—" Bob Star was voiceless with horror.

"Precisely. Mark Lardo was the beast."

"Ah, so," said Giles Habibula, shuffling in. "The galley is full of mortal human bones."

"The artist in the queer soul of Justin Malkar," mused Jay Kalam, "would be well satisfied with the retribution of Mark Lardo."

Faintly, from the distant brig, Bob Star could hear the hoarse, animal screams of the mad fugitive: "Don't turn me out! They are waiting in the dark, waiting for my flesh. Don't turn me out!"

"Ah, Jay," Giles Habibula said sadly, "'twas a mortal weary task you gave me. But I've cleared up the power rooms, as you bade me, and inspected the rockets and geodynes."

All three faced him anxiously as Jay Kalam asked: "Are they in working order?"

The old man inclined the yellow globe of his head.

"Ah, so, Jay. The generators are the sweetest I ever touched. But the cathode plates are gone, to the last ounce. And the rocket fuel left in the tanks would not move the ship a precious inch!"

XIII.

GILES HABIBULA remained on guard, while the others tramped the frozen miles to the wreck and staggered back under heavy drums of rocket fuel. Then the old man primed the injectors, and Bob Star, navigator, took his stand on the bridge. With a roar of blue flame, the *Halcyon Bird* broke free of the frost, and soared through green dusk to the wreck.

For many hours, then, they labored, carrying cathode plates and drums of rocket fuel from the intact stores beneath the chart house of the dead *Invincible*. Giles Habibula set the galley in order and stocked it from the wreck, and when, at last, the *Halcyon Bird* was

ready for flight, his deft hands had a hot meal waiting.

"Now," said Bob Star, "we're off for the comet!"

"Aye," rumbled Hal Samdu, gloomily savage. "But it took us too long. If that murderer has found Aladoree there——"

His eyes fell to his spoon, and Bob Star saw that it was crumbled into shapeless metal.

"It isn't long," said Jay Kalam slowly, almost wearily, "since I left this spot, for the comet. I had a ship a thousand times the size of this, with a thousand times the fighting power. Out there is the wreck of it."

But elation surged up in Bob Star as he rose hastily from the neat white table. Relaxation and warm food filled him with confidence. He was drunk with the joy of escape from bleak Neptune, eager for the bright freedom of space and the blood-hastening song of speeding geodynes.

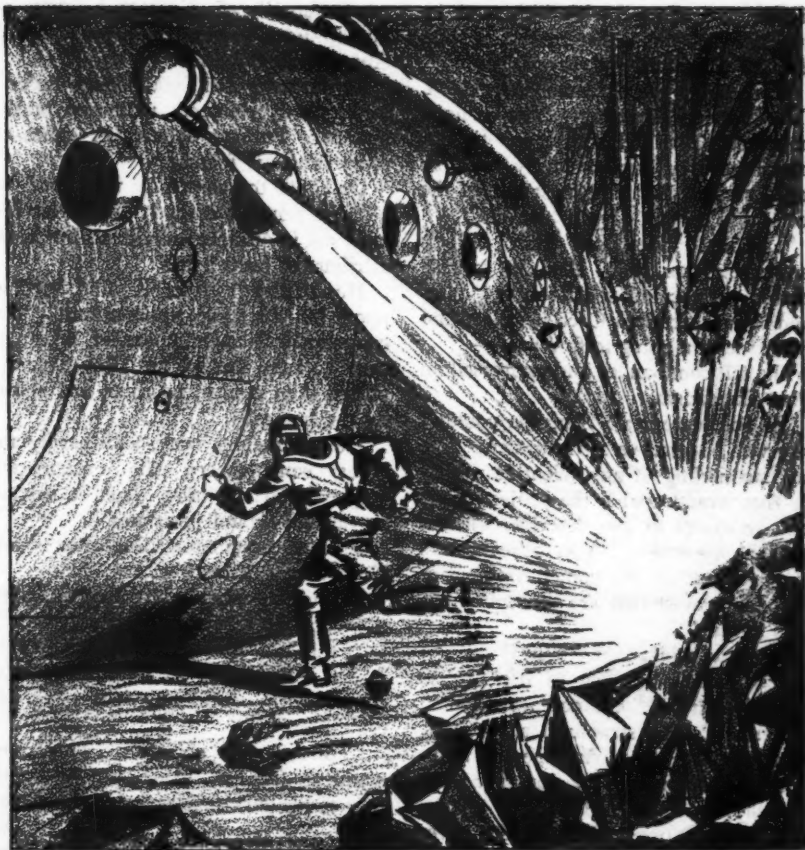
"We're all dead tired, I know," Jay Kalam was saying. "But we must take no time to rest, until we're off."

He sent Bob Star back to the bridge, Giles Habibula to the power rooms, Hal Samdu to the gun turret.

And they burst at last from freezing clouds into the clear immensity of space. A dimly green, oblate sphere, Neptune fell away into a blackness that was pierced with the myriad eternal stars, webbed with the pale silver stuff of nebulae. Bob Star shut off the rockets. The geodynes sang loud, and the greenish sphere, below the small, ghostly globe of Triton, visibly diminished.

The Sun flamed bright and tiny in the void, an amazing star. Great Jupiter and tawny Saturn were faint and far-off flecks, beside it. Earth could not be seen.

Bob Star's eyes were on the green, pale ellipse of the comet ahead. He was alone in the little room. The only sound was the high-pitched hum of hard-driven



He saw the slender needle swinging down, a spectral finger of death. Rocks exploded behind him—

generators, and the faint clickings from chronometers and charting instruments. Out of the hard, eternal splendor of space, the comet returned his gaze, like a green, malignant eye.

He was thinking again of its mystery, its wonder. Twelve million miles long, it had a thousand times the mass of Earth—yet the Cometeers had steered it Sunward like a ship.

The Cometeers!

Obviously, they were superintelligent. They were invisible, or could make themselves so. The armament of

their unseen scouting vessel had destroyed the system's most powerful fighting ship, had dissolved mankind's strongest fortress into liquid flame.

MEN knew no more of the Cometeers.

Looking at that green, hypnotic eye, Bob Star tried to picture them. Could they be human? He tried to believe that they were, for their humanity meant to him the reality of the girl—or the vision—who had come to warn him in the prison. The alluring, baffling riddle

of her was always with him, and he clung to his belief in her reality, in spite of Giles Habibula and Jay Kalam.

"Lad, lad!" the old man had chided. "You've been dreaming. You've lived too much alone. 'Tis true you have a mortal need of such a lovely maid as you describe. But you must not let the need build her out of your dreams."

"Dreams!" cried Bob Star. "She's as real as you are! And in terrible trouble—you could see it on her face. And if ever Stephen Orco is killed, and I am free, I'm going to find her——"

The tall commander had expressed an equal skepticism.

"If she were real, Bob, she couldn't very well be a native of the system. We have no inkling of any scientific principle that would enable the projection of such an image as you describe, without terminal apparatus. You believe she's an inhabitant of the comet, Bob. But the odds against that are multiplied billions to one."

Bob Star whispered, "Why?"

"The forms possible to life are so infinitely various," the commander said deliberately, "the structural adaptations of protoplasm to environmental influences are so amazingly complex, that probably on all the planets of all the suns in the entire universe, there never was and never will be another race that could be called human.

"I think, Bob, that Giles is right—you should regard your vision as purely subjective, a product of your fears together with the curious force that rendered you unconscious. Rather than human, it is more likely that the Cometeers are something you wouldn't recognize as life at all."

Bob Star stared back at the never-blinking, insidious green orb of the comet, until the ship and the world ceased to exist. He and the eye were alone in space. And the eye was drawing him onward, into nameless doom.

If the Cometeers weren't human,

what were they? Grotesque things of flesh? Formless amoeboid protoplasm? Animate vegetables?

Or stranger still, could they be collocations of elements unknown in the system? Perhaps spheres or cubes or other fantastic forms?

Or could the comet, he wondered, be a single sentient entity? Might its life exist not in discrete individuals but as an attribute of the whole?

Horror took root in his mind, feeding upon his fantastic speculations. The commander brought no relief, when he came to take the bridge. Bob Star reported their course, position, and velocity mechanically.

He was reeling away, with hardly another word, when the exclamation stopped him: "Pluto! Isn't it beyond its normal orbital position?"

Like an automaton, Bob Star stumbled to consult his log.

"Pluto had already left its orbit, commander," he reported wearily, "when I took the first observations, off Neptune. It has since been moving toward the comet, with continually increasing acceleration."

"Toward the comet?" The commander's face was grave, but the grimness of his dark face revealed consternation.

"Perhaps," Bob Star suggested from his dull apathy, "the planet has been grasped with such a beam of force as you say seized the *Invincible*."

Wearily, he rubbed at the white scar on his forehead.

"The people——" whispered Jay Kalam. "The colonists—what will become of them?"

"I don't know, commander," said Bob Star, blankly.

"If Pluto has been snatched away, another planet may be taken, and another." Jay Kalam was husky with dread. "The Sun may be stripped of planets."

"Yes, sir," said Bob Star, without interest.

The commander looked at him with sudden intentness.

"You are very tired, Bob. Go ahead to your quarters and sleep."

BOB STAR saluted like a run-down robot, and staggered away. He dropped, fully dressed, upon his bunk. But sleep evaded him. The green eye of the comet had assumed a fearful, penetrating power. It was looking into his cabin, searching his very mind. He shrank from it, shuddering, but he could never escape it.

The thin whine of the generators was eerie, hypnotic music. His numbed mind broke it into weird minor bars. When it carried him at last into an uneasy half sleep, horror followed.

Nightmares came, in which the Cometeers assumed every dread shape that his waking brain had suggested, and beset him in frightful hordes. He and the girl struggled side by side, vainly, to fend off nameless doom.

He woke with a sudden start, rigid, drenched with ice sweat. Loud and uncouth and terrible, he could hear the screams of fear-ridden mad Mark Lardo.

The four days that followed were to Bob Star four eternities of anxious strain.

"In five hours at our present rate of deceleration," he reported to Jay Kalam at last, "we should reach the surface of the comet."

"Still," said the commander gravely, "I cannot believe that we shall be allowed to approach it, unopposed."

He took the controls, and Bob Star went to see the others. Hal Samdu was in the gun turret, lying back in the padded seat, fast asleep. It was no quiet slumber. His great limbs were tense, jerking spasmodically. He was muttering, groaning.

"Take that!" Bob Star distinguished the words. "For Aladoree!"

He went down into the power rooms. Giles Habibula was sitting on the floor beside the geodynes, with his fat legs spread wide. Empty bottles were scattered about him. One not empty was standing between his legs.

He was very drunk. Only his voice and the uncanny deftness of his hands seemed unaffected.

Jay Kalam's soft voice whispered from a speaker. The old man dragged himself heavily to his feet, and lurched toward the generators. His hands made some quick, skillful adjustment. His small, dull eyes scanned their humming masses with affectionate care.

He collapsed again, beside the bottle.

His bloodshot eyes, wandering across the floor, found Bob Star's feet, and climbed to his face. He started.

"Mortal me!" he gasped. "You gave me a dreadful fright, lad. My first fancy was to see some bloody, monstrous thing, creeping in to destroy me. Ah, 'tis a fearful voyage, lad! A fearful voyage! 'Tis mortal certain we'll never live to reach the comet.

"Sit down with me, lad," he urged, "and share a drop of wine. The blessed warmth of it will drive a little of the cold fear from your heart. Ah, old Giles Habibula should have been a sorry soldier, lad, but for the precious courage that comes foaming from the bottle!

"And now it matters not what the miserable doctors may say. Old Giles has no fit stomach for his blessed wine, they say. And his poor old heart is about to stop. But wretched old Giles Habibula will never die of his precious wine—that is mortal clear!

"He is doomed by the horrors that dwell in the comet. Can't you feel the evil power of them seeping into the very ship, lad? Can't you feel the icy breath of them on your neck? Can't you hear them, cowering invisible in the corners?

"Ah, 'tis a thing of mortal evil come

from space to destroy the system, lad. The age of man is ended! And we are the lucky ones who are the first to die, and who die while we are drunk. Drink with me, lad! Wine is a strength and an armor. Few ills can touch a man drunk with wine."

And he tipped up the bottle again.

Bob Star returned to the bridge.

Before the hurtling ship, the comet expanded.

The sharp-edged, greenish oval of it looked the size of an egg, and the size of a man's hand. It spread across the black of space. It swallowed the stars. It became a sea of terrible green, overflowing the heavens.

THEY examined it with every instrument the ship possessed.

Baffled, the tall commander of the legion at last shook his dark head.

"I can't make anything of it," he said. "That green surface is a perfect geometric ellipsoid. It is absolutely featureless. At this distance, we should be able to see anything as small as a house or a ship or a tree. And there is nothing."

"But the raiders," said Bob Star, "were invisible."

Jay Kalam nodded.

"They were. And perhaps they dwell upon that surface, invisible."

He stroked the dark angle of his jaw, reflectively.

"But I don't think so. It's more likely, I think, that the green is a kind of armor—not material, perhaps, but a wall of fixed energy—the hull, let us say, of a ship. What are we to find within?"

Bob Star bit his lip, without speaking.

And still the comet spread. Its green tide overwhelmed the stars, until its fearful enigma covered half the sky before them. And still the edges of it appeared knife-sharp. Still its pallid,

weirdly gleaming surface was unmarked, impenetrable.

Jay Kalam turned wearily from a telescope, muttering: "Nothing, nothing."

Bob Star was stiff, quivering. His chest felt cramped. His breath was slow and irregular. Sweat came out, unnoticed, on his palms. He started unreasonably at the ringing of an alarm gong. A breathless, involuntary cry of fear escaped his dry lips. Apprehensively, he sprang to the instruments.

Anxiety edged even Jay Kalam's calm, grave tone, as he asked: "What is it, Bob?"

"We have encountered a powerful repulsive field," his husky voice reported, "emanating from the surface of the comet."

Swiftly he took readings from the dials, integrated the results upon a calculator.

"Already," he said, "it is absorbing our momentum faster than the geodynes."

He spoke into Giles Habibula's telephone. And the generators, which had been checking the terrific momentum acquired along the billions of miles from Neptune, ceased to hum.

In the silence, he read the dials again.

"The repulsion is mounting," he announced. "I'm afraid we'll never reach the surface——"

He spoke again to the power room. The geodynes replied, pushing forward, now. At quarter speed—— At half —— At full power——

Bob Star turned, at last, to Jay Kalam, shaking his head in bewildered defeat.

"Our forward momentum is gone," he whispered. "We are being driven back, against the full thrust of the geodynes."

"Then," Jay Kalam said slowly, "the green is an armor—a wall of repulsive force——"

"And we can't pass it. At this rate, the repulsion must increase to infinity at the green surface. That means that an infinite velocity would be required, to burst through——"

His voice was cut off by a shrill scream of utter terror.

They both started, turning.

"It's the maniac," Bob Star whispered. "Mark Lardo."

A thin articulation, bubbling with fear, it came again: "They're trying to eat me!" There was a gasping, shuddering shriek. "Don't let them eat me!"

Bob Star turned slowly back to his instruments. The madman had been screaming, at intervals, ever since his capture—though never with such ungoverned abandon of horror as this.

"Is there nothing," he asked, "that we can do for him——"

Jay Kalam's hand grew tense on his arm.

"Bob——" he whispered.

Bob Star attempted to speak, and the icy talons of fear sank into his throat.

"Something," he faintly heard Jay Kalam's low voice, tremulous with suppressed consternation, "something is with us, on the ship!"

But he had already become aware, through what sense he did not know, of a dread, malific presence. He had heard nothing, certainly. His eyes saw nothing. Nor had anything touched his body. Yet he knew, without the slightest doubt, that some fearful, supernal entity had come among them.

A hoarse, unwilling outcry burst from his lips.

"Look! The green——"

A greenish mist was suddenly obscuring the instruments before him; a green haze filled the little room. His body tingled to a sudden, stiffening chill. All his sensations were curiously blanketed, dull.

Very faintly, Jay Kalam's voice came

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to him: "Is this the same agency that overcame you at the prison, Bob?"

His body had become a clumsy, unresponsive machine. He realized that it was falling. Consciousness was fading before universal darkness.

Dully, from a vast distance, he heard the thin screams of mad Mark Lardo: "I don't want to die! Don't let it——"

XIV.

BOB STAR picked himself up, painfully, from the floor of the tiny bridge. His limbs were strangely stiff, unresponsive. A faint, unpleasant tingling sensation still came from all his body. His vision, for a moment, was misty. A dull, persistent ringing faded slowly from his ears, and he perceived abruptly that the keen humming of the geodynes had ceased.

A dreadful silence ruled the ship. Even the screams of Mark Lardo had stopped.

Beside him, on the floor, Jay Kalam groaned faintly. Bob Star bent, dizzily, to examine him. His body was utterly limp, as if lifeless. The skin was flushed, from dilation of the capillary vessels. Heart and breath were very slow, irregular. The skin felt cold with sweat.

He groaned and stirred again. Life tensed the dead-limp arms. He was recovering.

Bob Star turned to the instruments. The geodesic indicators showed axial deflection zero, field potential zero. The ship was still hurtling away from the comet, to the now unopposed repulsion.

Jay Kalam opened his eyes, checking another groan.

"Our visitor—it is gone?"

"I think so." Bob Star was helping him to rise. "But the geodynes are dead. We're flying before that repulsion, helpless."

"What was it?"

"I don't know." Bob Star tried to keep the echo of stark dread out of his voice. "I didn't see anything, except the green——"

"That might be a penetrating radiation," Jay Kalam suggested, "that short-circuits the neurone fibers, sufficiently at least to prevent any conscious mental action. How long were we unconscious?"

Bob Star looked at a chronometer. "About ten minutes."

"I wonder why it came aboard?" His voice was anxious. "Please go aft, Bob, and see what happened to the others."

A muttering groan led Bob Star into the gun turret. Hal Samdu was just dragging himself up behind the great proton needle, stiffly flexing his mighty arms.

"Aye, Bob," he rumbled. "What came upon us?"

"I don't know, Hal. Tell me, what did you see—or feel?"

The giant shook his rugged head.

"I saw nothing," he said. "A monstrous shadow crept into the ship. Then the green mist was in my eyes, and I couldn't see. And this stiffness seized my body and I couldn't move. That is all I know."

Bob Star was descending toward the power rooms, when a faint, whimpering sound led him curiously to the brig. He looked through the barred door, at Mark Lardo. And abrupt horror spilled out his strength.

GASPING, weak, trembling, he clung to the bars. His distended eyes stared through, at the thing on the floor of the cell.

Mark Lardo had been big—a shaggy, powerful human brute. But the shrunken thing in the cell seemed hardly larger than a child. The skin of it was uncannily white, and its limbs were oddly, hideously shriveled. It lay inert

on the floor, making feeble little movements, whimpering.

"Mark!" cried Bob Star, his hoarse voice thick and clotted with horror. "Mark! Can you hear me?"

The thing moved a little, feebly. The shrunken head rolled back, and Bob Star staggered away from the bars. For its flesh was drawn, wrinkled, until it looked like the head of a tiny mummy. Its skin was white, with a loathsome, dreadful whiteness. Hair and beard were gone.

But the supreme horror resided in its eyes. They were sunk deep into the monkeylike skull, and queerly glazed. Bob Star thought they must be blind. Smoky, yellow shadows swirled through them. They were the eyes of nothing human.

Sick to the very heart, Bob Star covered his eyes. He stumbled away.

Even though a raving maniac, the Mark Lardo of ten minutes ago had been a man—burly, massive, powerful. His great, wild voice had been ringing through the ship. This wasted, animate horror was no man. It had less than half the bulk of Mark Lardo, and little indeed of the savage, animal life.

Bob Star reeled along the deck, shaking his head, seeking to dislodge a clinging terror from his mind. He stumbled down the steps into the power rooms, and stood swaying at the bottom.

"Giles," he called out, hoarsely, "have you any wine?"

The fat, short bulk of Giles Habibula was leaning disconsolately against the shining mass of one of the geodyne generators. His gross arms were flung about it. His massive shoulders were trembling. Bob Star could hear the dry, broken sound of his sobs.

He didn't hear, and Bob Star called again: "Giles, I want a drink."

The old man heard, and pushed himself away from the generator. He came

steadily across the room, all trace of his drunkenness gone. His fishy eyes were weeping frankly, unashamed. Tears were streaming down his purple nose.

"Ah, lad," he lamented bitterly, "you find me at a mortal evil moment. You find me crying, as if a precious friend had died!"

Bob Star came a little toward him, trying to shut out his memory of the whimpering, lifeless horror in the brig. He grasped at any diversion.

"What's the matter, Giles?"

"'Tis the blessed geodynes, lad. Here's a drink."

He took a full bottle from a case against the wall. Bob Star gulped down half of it, without stopping for breath. Still sobbing, Giles Habibula finished the remainder. He wiped a forlorn yellow face with the back of his hand.

"Lad," he said tearfully, "I was a generator man in the legion for nearly twenty years. But never did I have such a set of geodynes as these, so powerful, so sweetly tuned. They answered my touch as if they had been alive, lad. They sang me a song. They loved old Giles, lad—as no woman ever did! They talked to him. They understood—more than a human being ever did.

"And the geodynes are dead, lad—dead! They've been murdered, mutilated. Every coil has been broken in a thousand places. In every tube, the filaments and grids have been destroyed. The very plates are warped, so that they could never be tuned again."

"But they look all right, Giles," said Bob Star.

"Ah, so, lad," returned the sorrowful old man. "Their shining beauty is left. But the life is gone out of them. They are but lovely corpses. I sat here, helpless in the paralysis of the green mist, and saw them murdered."

"Saw them?" echoed Bob Star, excitedly. "What did you see, Giles?"

"Ah, lad," he said, "'twas an evil vision. Its memory is a monster, preying on my poor old mind. 'Tis a fearful thing, better drowned in wine than kept alive with the nourishment of talk. Let's drink again, lad, and speak of it no more!"

HE brought another bottle out of the case by the wall. Bob Star caught it out of his hand, and pulled him toward a little bench in the end of the room.

"Sit down, Giles," he said, his voice quick and ringing with eagerness. "Tell me what you saw—everything! Now—before you forget. It may help us, Giles." His tone went hard with urgency. "It may aid us, in the end, to kill Stephen Orco!"

"Mortal me, lad!" the old man protested.

His small red eyes filmed for a moment, with naked, uncomprehending horror. His gross bulk shuddered, and he reached convulsively for the bottle.

"Let me drink, lad. For life's sake, give old Giles a taste of blessed oblivion! For the thing he saw must be forgotten, lad, or poor old Giles Habibula will never again be sane."

Bob Star held the bottle away.

"Just tell me, Giles," he begged. "Tell me everything you saw. Then you may drink. But we must know what it is we're fighting, Giles."

"'Twould be a crime, lad, to shock your young mind with the mortal terror of it. Give me the wine."

Bob Star bent over him, earnestly.

"You must tell me," he insisted, "for the sake of my mother. She's in terrible danger, Giles. Stephen Orco is hunting her, to murder her. What you saw may help us save her. Don't you want to help her?"

The old man sighed noisily, and relaxed on the bench.

"Ah, yes, lad." The yellow mask of

his face warmed. "For long, long years, poor old Giles Habibula was among the loyal guard of Aladoree. And he would face that mortal horror again, lad, for your blessed mother. Ah, if any act of his could save her precious life——"

"Then tell me——"

The fish eyes were staring sorrowfully at the silent geodynes.

"Ah, well, I'll tell you the little I can. The thing I saw was strange enough—too strange for reason to accept, lad. But the mortal horror that froze my poor old bones came from what I felt, and not from the frightful thing that moved before my dim old eyes.

"Ah, 'tis mad and hideous as a nightmare, lad. And it may be but a vision, for all I know. For it came when that dreadful paralysis was upon me. It may be unreal, lad, as the girl you saw in——"

Quickly, Bob Star protested: "But she wasn't——"

"Anyhow," the old man wheezed, "this was more than a shadow on the wall. It was real enough to wreck my blessed generators."

He blew his nose.

"Exactly," asked Bob Star, "what did you see?"

"The ache of coming harm has been gnawing at my poor old bones ever since we left Neptune," began Giles Habibula. "Even wine couldn't kill it. And, suddenly, a little while ago, I knew that fearful evil had crept into the ship. I heard Mark Lardo howling like a tortured beast. And then the green mist dimmed my eyes, and the paralysis seized me.

"Poor old Giles couldn't move his hand, not even to lift a blessed drop of wine.

"Ah, so, lad! I was sitting here on the floor, with my back against the wall. The bottle was on the floor between my legs. But the green haze was growing

thicker in the room, and I couldn't get the bottle to my lips.

"The blessed generators still were singing strong and eager. But I couldn't have stirred to tend them—not for life's sweet sake.

"And then the thing came into the power room. I could hardly turn my poor old eyes to see it, for that mortal paralysis. It came partly down the companion, and partly through the wall, lad. And the metal cases of the geodynes were no barrier to it.

"It walked across, toward the generators——"

Anxiously, Bob Star's voice cut in: "What was it like, Giles? Was it like a man?"

"Me lad! 'Twas like no man!" The thin old voice was keen-edged with dread. "'Twas like nothing that old Giles ever set his eyes upon. 'Tis better to forget the look of it, lad. For it was a thing that no man can look upon, and hope to keep his blessed reason."

"Can you describe it?"

"Mortal me!" He shook the wrinkled yellow sphere of his head, and swallowed for a huskiness in his throat.

"Go on. Try——"

"'Twas a thing of moving fire." His small eyes rolled upward. "Ten feet tall it stood. The head of it was a point of cold-violet fire. It was bright and small as a star, and wrapped in a little cloud of violet mist.

"The foot of it was another star of red-hot light, at the core of a little moon of red haze. And between the violet star and the red one was a swirling pillar of light. Its color was silvery green. It was larger in the middle, like a spindle. And it kept whirling; it was never still.

"And a broad green ring, two feet across, was floating around the middle of the spindle. It was like a ring carved out of emerald. It was the only solid

looking part of the thing—and it wasn't too solid to pass through the wall.

"AH, LAD, that's the way it looked, as well as old Giles can tell you. But the horror wasn't in the look of it. The horror came from what I felt. It seeped into my poor old body, like the fearful cold of space. The thing was a magnet of living light, lad. And its magnetism was pure horror.

"And all the mortal time, that paralysis held me. Old Giles sat there on the floor, lad. He couldn't have moved a blessed finger, not to save his poor old life."

"Just what did the thing do, Giles?" Bob Star demanded, tense-voiced. "Tell me everything you can."

"Ah, it did enough to my precious geodynes, life knows," he moaned. "It came down here into the power rooms, partly through the door and partly through the wall.

"It was alive, lad. It was never still. The silver-green mist was swirling. The red star and the violet star beat like hearts of light, in the little moons. Only the green ring shone with a steady glow.

"It came across the floor, lad, to the precious generators. And the green-white mist swirled out—it reached into them, through the metal of their shells. The geodynes made a fearful, hurt sound, lad. It was their cry of death.

"They were silent, then. I could hear Mark Lardo screaming.

"The thing left the murdered generators. It came toward me."

Giles Habibula shuddered. Dread shadowed the seamed, yellow mask of his face. His dull eyes filmed again.

"Mortal me!" he gasped convulsively. "I thought old Giles was surely gone then, lad! The fearsome creature was hungry. I could feel the hunger in it. Ah, 'twas a foul and noisome greed! It yearned for the very life, the soul of me, lad.

"And the greenish, shining mist reached out to take me.

"But then the madman screamed again." Gustily, he sighed. "Ah, that's all that saved old Giles! The mortal creature saw me to be an old man, and weak with many infirmities, and my pitiful shreds of flesh poisoned with wine. It heard Mark Lardo scream.

"And it left me, for the sweeter meat of a strong young man.

"It floated up to the roof, lad. The cold-violet star went through it, and the swirling, silver-green mist. The green ring melted into it like a dream, lad. And the red star followed.

"And the thing was gone.

"I was listening to Mark Lardo. There was a stillness, as if he tried to hide from the thing, lad. And then he screamed again. It was a sound that would turn the blessed blood to ice in your very heart, lad. It was a shriek of agony you can't forget.

"And I didn't hear anything more."

Bob Star stood dazed with speechless dread, thinking of the bleached, whimpering, shriveled thing he had seen in the madman's cell.

"Ah, so, lad," said Giles Habibula, "that's all. And you must agree that it is dreadful food for thought. Ah, 'tis a cruel wound in the mind, lad, that must be healed with wine."

His eager, trembling hand took the bottle. He turned it up. The yellow, wrinkled skin of his throat worked convulsively until the last drop had vanished.

Bob Star stumbled out of the room. Like maggot fangs gnawing at his mind was memory of the thing in Mark Lardo's cell: a dreadful husk, with everything human, all that was living, drained from it unspeakably.

Even the curious, artistic soul of Captain Justin Malkar, he thought, could hardly have designed or desired a more

frightful punishment for the treason, the murders, and the cannibalism of Mark Lardo.

XV.

THE CREATURE in the cell was not yet dead when Bob Star forced himself shakily back. It was no longer able to move itself, however, bodily. And its singular whiteness was flushed with curious gleams of disconcerting iridescence.

A peculiar species of disintegration had already set in.

Perceiving that the being would not long possess any manner of life at all, Bob Star called Jay Kalam. They gathered it up and removed Mark Lardo's garments from it, which were outrageously too large.

When they laid it upon the bunk in the cell, several of the shriveled fingers and toes had already come away. Any attempt at medical aid was clearly useless.

Perplexing indications of life, nevertheless, persisted for more than an hour. During that time the unprecedented disintegration of the flesh continued, with an increasing accompaniment of polychromatic phosphorescence. There was no betrayal of intelligence, but from the expression of the grinning, shriveled head, and from a few whimpering sounds the creature made, Bob Star believed that it was still aware of agony.

At last the yellow, smoky light, which had been like a dull flame of evil, went out of the incredibly sunken eyes. They were left terribly white, obviously blind, and shimmering with the same rainbow iridescence as the rest of the body.

The thing made one or two more feeble, reflexive movements. But its state was very soon such that anything describable as life was hideously impossible.

The remains, still burning with a cold, pallid opalescence, began to flow.

Overcome at last with voiceless hor-

ror, Jay Kalam nodded his head. Bob Star and Hal Samdu rolled what was left of Mark Lardo into his blankets, and cast it out through the air lock into space.

Jay Kalam spent two hours in the minute laboratory aft the galley, with a small specimen he had retained for analysis. He came out with a solemn, baffled face.

"What I analyzed," he reported, "was not human flesh. Several of the elements found in the human body were completely lacking; others were present in erratic proportions. Compounds were present that are utterly alien to the composition of normal protoplasm.

"Something," he concluded gravely, "the thing which entered the ship, and which caused our temporary unconsciousness, and which Giles has described to Bob Star—that something fed upon Mark Lardo. It consumed some ninety pounds of his weight. What it left could properly be called neither living nor human."

"Commander," Bob Star asked, in a husky, uncertain voice, "what—what do you think it was?"

Jay Kalam rubbed his long, lean jaw. His dark, thin brows bunched deliberately.

"We expected to encounter no familiar form of life upon the comet," he said. "For upon the known planets, comparatively slight differences in environment have led to tremendous variation in living forms. Change, variation, specialization, is typical of life.

"I should grant that our visitor was alive. For it manifested intelligence and purpose; it moved, fed.

"It must be, in a sense, material—for it consumed ninety pounds of matter from the body of Mark Lardo. Apparently, however, it is free of some of the limitations of matter as we know it. It seems to have been interpenetrable with the wall of the power room, and, of course, with the hull of the ship, also.

"The Cometeers—it must have been one of them—obviously have advanced far above us, scientifically. They have at their service agencies and instrumentalities that we have not begun to grasp. We are forced to suppose them able to manipulate matter and energy, perhaps even space and time, in ways that we cannot fathom."

BOB STAR was silent for a time, fighting grimly for his belief in the humanity of the Cometeers—for that meant, to him, the reality of the girl of his vision. But his faith died, before the silent, grisly horror that still stalked the ship.

"I've read an old legend," he whispered suddenly, "of things that sucked the blood of the living—vampires——"

Jay Kalam looked at him, with his dark face drawn into a mask of awful dread.

"The vampire," he said, "against the thing we have witnessed, is a feeble and inoffensive myth."

His horror-widened eyes stared into the cell where Mark Lardo had died.

"We had wondered at the purpose of the Cometeers." His whisper was ghastly, shocking. "I think that now we have seen. And I think that the doom of humanity will be something

more hideous than any man has ever dreamed."

A harsh, inarticulate rumbling came from Hal Samdu.

"I think," the commander's faint whisper went on, "that they have come to the system for food."

"Fight! We must fight!" rasped Hal Samdu. "Giles, you must fix the generators!"

Tears glistened in the old man's eyes.

"Ah, me," he cried, "it cannot be done! My beauties—they were murdered——"

Bob Star returned with Jay Kalam to the bridge.

"We are now beyond the repulsion," he reported, when he had taken observations, "although we are still flying away from the comet with our acquired momentum.

"There is still fuel for the rockets," he said. "But apparently we can't hope to enter the comet. And we are two billion miles outside the system——"

He laughed shortly, bitterly.

"With only the rockets——"

At that moment red telltales flamed; the ship quivered to the clangor of alarm gongs. He whirled back to the instruments and gasped, breathless: "Asteroid ahead!"

TO BE CONTINUED.

Alkalize with Alka-Seltzer AT ALL DRUGGISTS 30°-60°
FOUND IN THE NATIONAL BAKER DOUGH CUPBOARD UNDER THE TONGUE

Ecce Homo

by Chan
Corbett

A study of the distant future

BEHOLD THE MAN! *Ecce Homo!* The heir of all the ages, the sum total to which the driving evolutionary force that had infected the first formless blob of protoplasm with the strange disease known as life had inevitably led—El, superman of the millennial century!

El lay snugly incased in his bath of nutrient liquid. He was perfection, the ultimate! The long, slow climb from the amoeba was over. All the strange, queer, primitive forms that had inhabited the Earth for millions of years had existed only that El might eventually be achieved.

It was for him that life had spawned and struggled; it was for him that a hundred thousand types had been tested and cast away as wanting by a carelessly profuse nature; it was for him that apelike forms deserted their trees and used prehensile thumbs for grasping tools and weapons instead of branches; it was for him that the savage grew into a society, the society into a primitive civilization.

It was with him in mind that man toiled and pioneered and invented and fought, climbing through the slow, inevitable ages toward the godlike. El, physically immortal, mentally omniscient!

Long before, unimaginable centuries of time, Earth had been inclosed in a crystal shell, even as El. No wandering meteor could pierce its infinite hardness, no inimical radiation from the explosions of extra-galactic space could penetrate its exterior. Air and water and warmth no longer seeped in irremediable waste into the outer void; weather was a function under strict con-

trol. Coal, oil, tides were long forgotten. The almost infinite power of the atom furnished warmth, food, motive force, everything.

El was a geometric round, a membranous sac immersed within the nutrient liquid of the sphere. Nothing else! But his constant attendant, Jem, was a man, normal in form and limbs, not much dissimilar from the primitive creatures who had inhabited Earth as far back as the twentieth century.

Jem and *his* kind had been bred carefully for static, non-evolving qualities. It all dated from that vast upheaval in the eighty-ninth century, after the cataclysm. The survivors of mankind had divided into two classes. The Masters forged ahead, under the leadership of one Jones. He had discovered the secret of controlled mutations. *Drosophila* flies, exalted to the *n*th degree, so to speak. Methods of shifting genes, those tiny units of heredity within the nuclear material of the cell; methods of chemical activation of desirable genes and eradication of those that seemed unnecessary.

OF COURSE, the initial efforts of Jones were halting, somewhat fumbling. But the race he evolved, with accentuated minds and specific talents, improved and reimproved, until—behold! El and his kind came into being.

There were only a few of these. Naturally! Jones had a certain fierce contempt for the vast body and generality of mankind. It was a pity, thought he, that the cataclysm had not eradicated the unwanted commoners. But, being a biologist, and not a man of war, he devoted himself to his superrace, his



The orb fled with blasting speed through resistant air, over the ever-functioning cities of the machines—

aristocracy of Masters, rather than to the completion of the task of destruction.

As for the others, the progenitors of Jem, they were at first permitted to

spawn in the teeming disorder of an elder day. Gradually, however, as the Masters grew separate and apart, and the gulf widened between them, it was inevitable for the normal, primitive type

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of humans to become subject and subordinate, to be given the menial tasks of life.

As even these were eventually taken over *in toto* by the ever-increasing complexity of the machines, and the manual, laborious work of earlier times became a dim anachronism, the usefulness of the Attendants grew less and less.

Then it was that the Masters of the hundred thousandth century took them in hand—though even then, the term "hand" had become purely a metaphor, a figure of speech, related to nothing physical in the structure of the Masters.

The Attendants were ruthlessly exterminated as lower forms of life whose presence disturbed and cluttered up the surface of the Earth. All, that is, except for a certain number, thereafter carefully to be bred by a proper manipulation of the genes for loyalty, submissiveness, for fanatical devotion to the Masters. Not, it must be understood, to the body of Masters as a whole—the supermen were too fiercely individualistic for such low-grade, communal conceptions—but for lifelong attachment to a single Master, and that one alone.

But to return to El, in that unimaginable century of the future whose very number was staggering. The ideal had been reached, the end of all the Masters' artificial evolution. Beyond him there was—nothing!

He was a round, membranous sac—the perfect geometric figure. He had no arms or legs or other vestigial organs. They were useless. Translation in space, the satisfaction of all physical needs, the regulation of a well-patterned world, were all infinitely better accomplished by the vast complex of machinery, automatic, robotlike, self-starting, self-regenerative. Nor had he heart or lungs or the muddled, intricate mess of viscera and skeletal framework of an earlier era.

Consciousness, thought, awareness, intellectualization and brooding on the

few remaining unsolved problems of the universe—what else was required? So that, in the interests of symmetry and a beautiful, ordered efficiency, El and his brethren were evolved.

Without arteries to harden, bones to grow brittle, hearts to wear out, stomachs to ulcerate under the pressure of crude, natural foods, small wonder that he was immortal! A huge, convoluted brain, inclosed in an indestructible sac, in turn inclosed in a bath of nutrient ichor, which oozed by osmotic processes through the sac, and fed, regenerated and cleansed the pulsing brain within.

But, alas! Nature, outwitted, artificialized, twisted into a seemly order by this race of supermen, had exacted a profound revenge! For perfection, the too-perfect, had never been contemplated by a universe of rawness, of cruelty, of alternate birth and destruction, of fumbling trial and error, of blasting nova and lifeless suns, of relativity and expanding, out-rushing nebulae.

El and his mates had achieved! There was no longer anything left for them to seek. The physical, the external, had been conquered, utterly subdued. They alone survived in a world whose every aspect was predictable, controlled. All other forms of life were extinct, destroyed as unnecessary, wasteful—except for the Attendants.

II.

IN AN EARLIER TIME the Masters had thrilled to the conquest of other planets, but that had also died in the achievement. With their mighty machines, the supermen soon transformed cinder-burned Mercury and frozen-gas Pluto to exact replicas of the Earth. They tired of the game in the course of ages. Even the far off, beckoning stars held no further lure. With their machines they could have hurled themselves across the intervening space, but to what profit? To recreate but

another Earth, similar in every respect to the home they had quitted.

So they abandoned the planets and returned to Earth. There were not many of them—so there was ample space for all, for the individual solitude they craved. Slowly, one by one, the few remaining intellectual problems were solved. There was nothing more. Evolution had ceased; growth had become a stagnant pool.

Appalling boredom! Profound quiescence! The weight of passivity grew insupportable. The machines required no attending, the devotion of the Attendants was almost the only fillip left to life. A fierce possessiveness waxed in the highly convoluted Masters, an overmastering delight, ludicrously primitive, for the constant little ministrations of these static replicas of primordial time.

Had there been a spirit of covetousness, too, of desire for the Attendants of their fellows as well as their own, all might yet have been well. For this would have produced dissatisfaction, biologic urges, envies, annihilations, war—and perfection would have exploded with a loud, resounding crash. Life would have been recreated on a lower plane, raw, cruel no doubt, but with the upward path a shining incentive before them.

But, unfortunately, the Masters were supermen, complete. They looked not with envy upon the Attendants of their fellows; they had sufficiency in their single slave. Not that their services were required; the machines could have performed the little tasks far better. But the Attendants had become a fixed tradition, and the Masters looked upon change as something brutal, primitive, from which their delicate convolutions shrank with fastidious repugnance.

The need for change had died. Processes slowed, ceased. So slowly, so imperceptibly, that one by one the Masters passed into oblivion without

any one, not even the hovering Attendant, quite knowing that he had died.

Their deaths were nothing organic, had nothing to do with disease. They represented merely a cessation of energy changes, a degradation into a waveless, motionless state of inertia.

EL OBSERVED the slow attrition of his fellows with what was at first indifferent torpor. What did it matter? What did anything matter? Being or nonbeing; it was all the same. He lay in his bath, feeding automatically, soaking in with a vast quiescence the physical impressions of the universe.

He had no eyes for seeing, no ears for hearing. Instead, every quiver of a molecule in the material scheme of things, every shift of state of an electron in its orbit, sent its pulsing waves through empty space and barrier matter alike to impinge on the delicate convolutions of the brain.

The hidden round of the Antipodes, the masked, invisible nebulae of the outer darkness, disclosed their secrets to his receptive neurons equally with the physical texture of Jem, hovering interminably before his crystal containment.

El yawned—that is, if a yawn had been possible. A settled boredom was upon him. Jem, the hundredth in descent of a long, remote-stretching line of descendants, no longer amused him.

Jem fed him deftly. It was almost his only function. For this he had been reared; for this he lived, until his specific span of mortal years was ended. Five hundred years an Attendant lived, and died to the expected second.

Jem soon finished his task, then humbly fed himself with a cruder, more bulky food out of a special container in the carrier machine. He was tall, youthful-looking, virile, handsome by the standards of an earlier age. He had been bred for physique and regularity. As the machine rose and flew swiftly away he squatted before his master, in

patient, perpetual expectation of new commands.

El's gaze—a crude term, expressing really the patterned interior reception of energized states—flicked over him indifferently. He was tired of that perpetual attitude. He was tired of everything, even the ichor that nourished him. His gaze drifted past him, over the smooth, hard expanse of Earth, a vitreous, even floor on which no tree or tessellated patch of grass broke the monotonous stretching, past the cities of the machines, seeking for the nonce the quiescent spheres of his fellows.

Round and through the Earth he bored, seeking. Something sharpened within him, quivered—a strangely new sensation, the first almost in uncounted years. The process had been so slow, so imperceptible, that, though the perception of it had naturally impinged on him as it progressed, awareness of its totality, of its meaning, had completely eluded him. Now for the first time he saw what had happened through the sluggish centuries, saw it with a realization that ripped through his quiescence like a flash of atomic disintegration.

III.

THE RACE of Masters had died out—they and their respective Attendants! On all the Earth, in all the universe, only two remained: El, and—at the Antipodes—Om! His similar sphere glowed in the eternal rays; it cradled in its hemispherical base even as El's did. And, squatting before its majestic orb, was an Attendant, a female, tall and straight even as Jem, but with slimmer limbs, more delicate face.

El and Om, sole remnants of the race of perfect beings! The rest had ceased to be, quietly and willfully, seeing no good reason to continue an interminable sameness of existence. One by one, each in his respective sphere, until the machines, finding the ichor untouched

and the Attendants gone or sprawled in moveless death, removed the master—a bulge of brain sac in a clouded fluid—for swift incineration in the disruptor tubes.

A quiver coursed through El's involved convolutions. Thought shimmered and played with lightning swiftness. Strange stirrings moved and had their being within his depths. Neurons darkened with chemical change, long-disused synaptic paths channelized and broke contacts with breath-taking rapidity. For the first time in misty eons El felt the surge of new ideas, of the strange and novel rise of fierce, urgent emotions of which he had had formerly only an intellectual, apathetic awareness.

It was a tremendous sensation. The gray, pulpy matter of his being actually shook within its sac, like a storm-swept sea. It was agonizing, delicious in its very tortured unaccustomedness. Life suddenly blurred and misted at the edges, evolved before him with incalculable forces. He almost sang and exulted. A faint buzz of electric friction actually exuded through the sphere. Life had a purpose, meaning, direction, once more. He tested his emotions and found them good.

What were they? What had caused this sudden snapping of the self-sufficient, moveless perfection of an ageless time? What strange, illimitable forces had been brought into play? The answer is exceedingly strange.

It was the sight of Om, his fellow and equal; it was the sight of An, his attendant. From the tiny dislocation of a single atom a new universe is sometimes born; another destroyed. El knew the majestic march of cause and effect, but for the nonce he possessed not his former wisdom to probe them deeply and without distortion. Certain emotions had been born in him full grown, and they clouded his ordered faculties, hid the future. Which was excellent; which was the very essence of life!

"Jem!" he said to his attendant, "come closer. We are going to visit Om." Now it must not be considered that El had a mouth, a larynx for the formation of sounds. His speech was a mechanical contrivance, activated by the electric surge of his brain. For himself, for the rare conversings with his equals, mere willing was sufficient.

Jem was startled. It was on the most infrequent occasions that the master spoke to him, and then only on little matters of really inconsequential attendance. But this was staggering. Never, in his memory, had El stirred from his timeless, moveless condition on his cradling base.

"Om?" he queried vaguely, puckering up his brows with unaccustomed thought. He did not know Om; had never seen him. His eyes were the eyes—a little sharper focused, perhaps—of the man of the eightieth century. He could not see around the earth, some twelve thousand miles away.

"Yes, Om!" his master repeated with a touch of impatience—a wholly new quality. "Obey my orders, fool."

AS IN A DREAM, and because obedience was a matter of inherited genes, Jem moved forward, close to the sphere. A strange force caught at him, sucked him sprawling to the crystal convex.

Then, suddenly, the orb with its im-mersed perfection, rose into the quiet stillness, fled with whistling, blasting speed through resistant air, over whirling, ever-functioning cities of the machines, over huge, wide monotonies where nothing stirred, nothing moved. Earth was a vast graveyard, devoid of life, of all things but the soulless, unknowing machines.

The wind howled and tried to pluck Jem from his eerie perch; the breath labored and gasped in his lungs as they rushed along. In a thrill of strange new terror he cried out to his master to slow

his awful speed, to return to his familiar base and renew the ordered quiescence of his former being.

But El paid no heed. For one thing, the novel wishes of his attendant were weightless, insubordinate even; for another, a fierce impatience glowed within him, a sparkling, crackling turbulence that surprised, even as it elated him.

Like a plummeting meteor the sphere plunged to Earth beside Om, settled without a jar. A carrier machine came swiftly forward deposited a hemispherical base on the ground, and went off in noiseless flight. El lifted, dropped into the base, settled into seeming quiescence.

The force of supermagnetism that had held Jem gasping to the incasement of his master, vanished as suddenly as it had sprung into being. Jem tottered back, loose, befuddled, his brain, unused to cataclysms of this order, seething with new impressions. The sight of Om was not in itself disturbing. He was like unto his master, indistinguishable as star with star. But An!

He had seen only one other Attendant before in all his life—a male who had wandered masterless into the restricted horizon of his vision, and toppled dead on the hard, smooth surface. But this creature, who had cried out sharply at the terror of their whistling approach and had been silent ever since, staggered him!

He sensed that she was like unto himself, yet somehow subtly unlike. She was slimmer, more delicate, for one thing. Strange sensations welled through him; sensations he had never experienced before.

She was watching him also, a little apart, with sidelong glances, that pretended to be unaware of his presence, yet embraced him completely. They did things to his internal economy. Delicious thrills coursed over him, set him tingling.

An irresistible urge swept him closer; to touch her, to feel for himself this

new miracle. Never before had he forgotten, like this, even for an instant, his consuming absorption in his master. She must have sensed his parlous state, for as he moved, she darted swiftly, gracefully, to the other side of Om's incasing sphere, as if for protection. Jem stopped, bewildered, like males in all the ages, at this rebirth of feminine coquetry.

Om knew that El had arrived. It was an invasion on his privacy, a thing that had been scrupulously respected for an hundred thousand years. But he did not resent it. Resentment had no place in the perfect end product of evolution. What did it matter anyway? The mere physical transposition of a fellow being did nothing to color existence with novelty for him. Had he wished discourse with El, he could easily have held it at twelve thousand intervening miles.

But what profit would there have been in discourse? El knew nothing he did not know; both were perfection, holding already in wearied embrace all the knowledge, all the inner contemplations, of a known and patent universe. So he said nothing, did nothing, to evidence an awareness of El's presence. In fact, it had already retreated into the recesses of his consciousness.

FOR a long while there was silence, profound, immutable. The attendants had squatted once more before their respective masters, seemingly engrossed in their tasks, seemingly unaware of each other.

El waited a decent interval. Inwardly he seethed with impatience, with eagerness to put into effect his carefully mapped out plan.

"Om!" he permitted the thought to emanate.

"What do you wish, El?" The query came back without any sign of interest, or real desire to be informed.

"You and I are the last of our race."

"Yes, I know." Om betrayed no excitement. It was a mere affirmation of an unimportant fact.

"Our fellows died," pursued El craftily, "because there was no reason for further existence."

"That is true," responded the other indifferently.

"Why do we not do the same?" inquired El. "I am wearied of continued, interminable sameness. An eternity of dead monotony appalls me."

"The universe will not last forever," Om pointed out.

"It will last for frightening eons," El declared.

"We shall cease to be, even as our fellows, before that, no doubt," said Om and withdrew his thoughts.

But El was not discouraged. "Why should we wait?" he asked. "Let us seek the ultimate extinction now, at once."

"It would be senseless effort."

"Not at all," El persisted. "Do you realize what it would mean? The deliberate destruction of our own entities. The lopping off of immortality with a single, sharp and speedy stroke. The one thing that none of our kind has ever experienced. Something new at last, something novel in the long, wearisome history of the race. The one thing we have sought in vain in a too-obvious universe. The thrill of suicide, the notable defiance of ourselves.

"Come, let us join in this last mighty gesture. With one stroke we wipe out life *in toto*, leave an infinite space time to the sterile movements of insensate electrons, protons, mere puckers in the texture of the all. What say you?"

Om stirred. His brain sac quivered in its nutrient bath. El had insinuated something new in his concepts. Suicide, self-annihilation, the elimination by their act of life itself! They twain, alone and solitary on the pinnacle of perfection, achieving at one irreversible stroke the superpinnacle of a superperfection. Be-

yond them nothing—nothingness! Now and for all eternity! A magnificent conception!

El waited with strained anxiety for the answer. Had his arguments, born of his newly acquired state, won over the calm, broodless indifference of his fellow solitary?

"Very well," said Om at last. "It is no doubt the best way for us to end. How shall we accomplish this ultimate act?"

A surge of exultation swept over El. He had won! But carefully he veiled his thoughts in a closed electrical orbit. Only the answer he willed emerged.

"Very simply. Do not exert yourself. I shall take care of the matter myself. I shall call the machines."

Not for thousands of years had it been deemed necessary to call the machines. They were self-energizing, self-reproductive, geared for all possible required tasks. But now, in obedience to the short-wave impingement of El's will on key units in the city of the machines, two great metal monsters, with pointed noses like ancient torpedoes, rose swiftly from the towers, sped like hurtling asteroids along beam channels direct for the waiting, immovable spheres.

Om watched their rushing progress with calm indifference. In seconds there would be a crash, and then—

"Their paths include the orbit of our attendants, no doubt," he suggested. "They, too, are life, though of an inferior order."

"Naturally," assented El craftily. "I have already plotted the courses." His mechanical voice rasped suddenly. "Jem, stand over to that side—there—do not move."

Om gave like directions to An.

THE two attendants moved submissively to the appointed spot their masters had ordered. Male and female, closer together than two attendants ever had been before, aware of their near-

ness, feeling a subtle, exotic interplay of forces. Jem saw the hurtling giants of destruction, saw them without fear, without thought of avoidance. It had been El's command. An felt a swift tremor, a surge of something within her she could not understand—yet she made no move.

Silently the masters and their attendants waited. The swift metallic engines came on with a swoosh of screaming air; nearer, nearer. Om's repose was intellectual, controlled. Annihilation, existence—neither mattered. But El concealed his processes in an impenetrable orbit of interlocking waves, waiting for the supreme moment.

Closer! Closer! The great torpedoes—tons of glistening metal—roared directly for the crystal spheres. An cried out sharply. There was a rending, splintering sound. Quartz shattered into a million jagged shards, nutrient ichor spattered geyserslike into the ambient air; a brain sac punctured like thinnest film. Om—a huge, twisted convolution of gray, spongy matter—spread fanlike in a rain of tiny, writhing blobs. Om was dead, annihilated before An's horrified eyes. Her master, the nexus of her being, was no more!

The second machine, abreast of its mate, smashed toward El. Almost at the instant of impact, so close to the fragile crystal incasement that barely a millimicron separated thrusting nose and shimmering quartz, El exerted all his mighty powers to the utmost.

A wave of meshed vibrations leaped out from his quivering brain to meet the invader, an impenetrable force wall against which stellite hardness smashed and fused into a flaming, futile disintegration.

A pæan of triumph sang inaudibly in the gray jelly of El. Life sang through him—life triumphant, supernal, irresistible. He had achieved his goal. Om was dead, even as he had cunningly

planned, unknowing to the end that he had been outwitted.

El looked out on the universe and saw that it was good. He was the last of his race, the solitary perfection in a world that held no other. What a glorious vista! No longer was eternity a frightening prospect. An endless time was not too long in which to contemplate the mastery of an entire universe, in which to brood on himself—the absolute, the unique, the single splendor!

No wonder his fellows had willfully ceased to exist. They were end products, but the all-embracing egoism from which the spark of life enkindles was not theirs. There were others—even as they. A dead level, a stupid equality of perfection. At one leap he had spanned the gulf, thrust himself into a glorious new state. There was no other El in all infinity. He was the ultimate, the unsurpassable!

IV.

JEM sat quietly before his master. Dim, unaccustomed thoughts struggled in his brain, yet without present effect. His task was implicit obedience, adoration. But An—the girl! She had cried out at the sight of her master's immolation. She had seen with wide eyes and affrighted mind the trick that had been played. Anger stirred; a new, a frightening sensation.

El viewed the chaos of her thoughts, read them easily, without effort. He could have killed her easily. According to tradition she should die—a Masterless Attendant. But he had broken with tradition, had placed himself beyond those subtle, binding cords. With this new state had come new emotions. Vanity had been one, possessiveness another. He wished her for himself; he desired more than a single Attendant.

He envisioned other possibilities. For vast ages Attendants had been reproduced by solitary parthenogenesis. Now

he would mate this pair, as in the long dim past. There would be variations, complexities. He would rear a horde of Attendants—subordinate forms of life, lowly, submissive—with which to amuse his eternal contemplation. It was good!

"An!" his thoughts filtered through the mechanical enunciator with metallic sound, "your master, Om, has ceased his being. I am your master now. It is my will that you and Jem, my attendant, mate for the propagation of a new race."

Jem stared. He did not quite understand, but vague racial instincts stirred within him. He glanced quickly at An and the sight was pleasing. Her face, so delicate and different from his own, was queerly the color of the distant Sun as it fell unheeded below the horizon.

She did not look at him; could not, somehow. Her heart was thumping; a sense of shame, unfelt before, pervaded her being. Shame, and this new novelty of flaming anger. Then she did a monstrous thing—a thing unthinkable. She rebelled.

"El!" she flared at the moveless brain sac in the crystal sphere, "I will not. I am not your attendant. My master is dead, done to extinction by some incomprehensible treachery of yours. I shall die—it is my duty, my necessity—but I shall not obey your commands."

El could have slain her then and there for her defiance. But he did not wish that. He had plans, bound up inextricably with this new confusion of emotions that coursed through him with novel thrills.

"You shall neither die nor disobey," he said coldly. "Jem," he proceeded, "behold, she is your mate. Go to her!"

Jem was shocked. How dared this strange girl—this being whose nearness made him feel warm all over—defy the mighty master? He moved slowly toward her, obedient to the command of El.

An faced him bravely. Her face was the deep-red of copper, her eyes held strange scorn. "Jem," she said, "come no nearer. I hate you, I despise you. You are not a man; you are an attendant, an obedient automaton to the will of your master."

Jem stopped, dazed, bewildered. The whip of this young girl's scorn cut and wounded. Yet she seemed infinitely desirable, though she hated him. Why? He was only obeying the command of his master, as was right and just. While she—

Still he did not speak. Speech was painful, slow to him. He had not had much occasion to use it. Neither did he advance.

El received the vibrations of his confusion. He saw no rebellion therein; only such stupidity as was normal to an Attendant. El, too, had lost something, though he did not realize it. Perfection had become a little less than perfect. Life in a ferment, fraught with vigorous emotions, could not be static. So that he did not read aright the tortuous neurone paths that were forming in Jem's brain.

ANGER, rage, stimulating, electric, yet clouding to an all-awareness, raced through El. An Attendant, a crawling form of life, had defied him! An, a slim and delicate thing. The metallic syllables of his speech comported oddly with the words. "Jem!" he cried. "I order you—seize this rebel. She is yours. On pain of annihilation I insist upon your obedience. Do not dare aught else."

He had lost his head—to use an ancient phrase. The poison toxins of anger, of mad, unthinking rage, darkened the gray of his convolutions. Thereby he forfeited his dignity, his power.

Jem heard and wondered. He saw the girl. An. There was a new look

in her eyes. A look of fear, of helpless, imploring appeal. A feminine appeal. Racial instincts stirred again. He felt protective, masculine. He felt all-powerful in the light of those eyes. Overwhelming rage swept over him. But rage was an emotion suited to his primitive body, its appendages and muscles. What was degradation to a Master was a source of strength to an Attendant. Red madness seethed against the one who had made this girl to hate him, to dread his approach.

Without quite knowing what he did, he bent suddenly. A strut of the machine which El had fused lay on the ground. It was a short bar, incredibly hard and compact. He swept it up into his hand, hurled it with all his strength. The distance was short, the movement exceedingly fast. Yet to El—who could stop a hundred ton missile in midflight, who could, with the exertion of his own inner powers, swing the Earth out of its orbit and send it hurtling to the farthest galaxy—this was child's play.

But El was no longer El! He was a new being, overwhelmed with envy, with passion, with covetousness, with vanity, with rage. In that vital second he was literally blinded—unable to think coherently. Later he would have understood, would have taken measures to regain his old clarity. But it was too late.

The short, thick bar crashed through the quartz, clawed the liquid nutrient, punctured the membranous sac. El gushed forth, an oozing, tangled mass of pulpy brain, to mingle in horrible flow with amber liquid and jagged needles of shattered quartz. El was dead.

Jem stared stupidly, hardly grasping what he had done in that instant of ancient emotion. His master was dead; he was a Masterless Attendant! He had slain with his puny hands the mighty one, the all knowing! The world rocked and reeled before him, the cease-

less vita rays darkened on his vision. A low moan escaped his tortured lips. What had he done? What would happen to him now?

HE WAS brought to his senses by the sound of some one calling him, by the touch of soft fingers on his arms. "Jem! Jem!" Unaccountably it was An. "I am proud of you! You are wonderful! You have killed the mighty El unaided. I—I love you!"

He opened his eyes, incredulous. What was that? What had she said? She approved—more than that—thought him wonderful! She loved him! Words that had come from remote ancestors, that had been lost for incredible centuries. His chest swelled; he stared with a certain condescension at the adoring girl. He even strutted a bit. "Pooh! It was nothing!" he said. "I could do it again. I am stronger than a Master."

Deep down within him he knew, of course, that El had been the last of his race, yet he actually believed in his new-found strength. Especially in the reflected light of An's eyes. He took her arm masterfully, drew her to him. She did not resist.

But then, in the transports of that first kiss, he suddenly shivered. They were alone—the two of them—alone in an alien universe. No Masters, no other Attendants, only the strange, impersonal machines! He drew back. "What shall we do now, An?" he asked timidly.

"Do?" she echoed with the guile of the serpent, and the wisdom of all women. "Why, dearest, you are a man, and you will provide. There are the machines—you will force them to their wonted tasks. You shall be their master, instead of El and Om and the others who ceased before them."

"I had intended that all along," Jem said hastily. He believed it, too. He bent toward her, whispered something. She flushed as she slipped her arm in his.

"A new race!" she breathed in awe. "A race of men and women like ourselves to people this Earth again, to strive, to conquer, to seek new knowledge always." Her eyes brooded on the infinite with tender gaze, this mother of a new and upward-groping life.

Slowly they walked toward the city of the machines.



When the horse runs home, and the ground is hard,
And you wish you were safe in your own back yard,
Don't faint, don't swear, and don't count ten—
Just rip off the wrapper and yield to that yen...

Compose yourself

with



the
Quality Gum



"Then I fell in—from a long jump! I couldn't avoid it!"

At the Center of Gravity

Accident in the spaceways!

by Ross Rocklyne

THE two of them, Lieutenant Jack Colbie and Edward Deverel, hung suspended without visible support in a space which, had it not been for the beam of light thrown by the lieutenant on his captured prisoner, would have been quite dark.

Jack Colbie was a direct social opposite of the other man. And Jack Colbie, of the Interplanetary Police Force, was widely known as a relentless tracker of criminals. Edward Deverel was the criminal, at the present instant, and Colbie had caught up with

him. The chase had started in Deverel's own domain, the domain of his piratical activities—the red deserts of Mars, and the broad canals that cut through them.

Both were clad in the tough, insulated, smoothly curving suits that man must wear in space. The transparent helmets afforded external vision, and now Deverel was looking through his at Colbie, insolently. But, since the scant illumination Colbie received came from the reflection of the beam he held on his prisoner, Deverel saw him as a gray shadow on the complete darkness stretching away behind.

"Well?" he inquired, with a disdainful flash of his white teeth, whiter still in the light of the beam.

"Well, nothing. Don't look so peeved. What else did you expect? You knew I'd catch up with you. I've got to maintain an unbroken record."

Deverel shrugged his shoulders. They could just be seen through his helmet. "Precedent doesn't prove anything."

"Oh, I suppose not. Forget it." Colbie studied the corsair's face. Deverel was good-looking, undoubtedly—better-looking than Colbie, certainly, who had a ravaged profile and a long jaw.

Deverel's nose was straight; he possessed attractive, but almost bitterly formed, lips; his eyes were blue, and the constant inner devilry of his nature burned in their depths.

"Let's forget you're my prisoner. Let's talk a while. I'm curious as to why you landed on Vulcan."

"Why?" Deverel laughed. "Did you want me to take a dive into the Sun?"

"Well, you were crowding me. I had to leave Mars, of course, when my band of canal marauders succumbed before Jack Colbie and his police. You chased me, Colbie, as I've never before been chased in this incarnation. I was going to land on Earth—I could have found a hide-out—but you headed me

off. So I tried Venus. Same thing. So what was left but Vulcan? Mercury was fooling around somewhere on the other side of the Sun.

"Oh, I guess I was a fool to land, since I knew that was what you wanted me to do. But you know what empty space and stars do to a man. The bigness of things gives him a colossal inferiority complex, and it puts him in the mood for anything. What I mean is, a man doesn't care. I was feeling something of that, and besides, I was tired of running, of being chased. That's why I landed on Vulcan, when I knew there wasn't a hiding place on its smooth surface."

"And, as it turned out," Colbie put in, "there was a hiding place. Only, I found you."

"And what good's it going to do you?" Deverel laughed in genuine amusement. "I've just been checking, and, according to the oxygen gauge, I won't live for twenty-four hours. I'll bet a binary your tank is in the same condition. There isn't any way of escape."

"Well," he went on in a dreamy fashion, "I suppose I've been skid-rayed. Skid-rayed by a cop at last. I always knew it would happen, though. That last stunt of breaking up the empress' canal excursion party was what got the I. P. after me."

He craned his eyes at Colbie. "But things have a habit of checking to zero. You're what you are, I'm what I am, and we're going to die. But who had the most kick out of it? Did you like to put men in prison? I wonder. But me! It was fun to slip the rings off the fat fingers of the empress!"

THERE WAS a shrug in Colbie's voice. "Maybe it was. Let's leave philosophy out of it. How did you happen to find the hole?"

"Well, I didn't look for it. Vulcan's never been considered worth a detailed

investigation, and so nobody knew the startling facts about the little planet.

"I saw the hole on a jump of ten miles across the surface, revealed by starlight. As much as I remember, it was about forty feet across, and on the night side, with the day side only seventy or so miles away. Anyway, I saw it, and I knew you were hopping after me somewhere on the night side, and I didn't give a damn any more, which, added to plain curiosity, made me jump in. The hole," said Deverel whimsically, "was deep, and I fell for hours. I suppose you knew I was down here, when you found the hole, eh?"

"After I had started falling," Colbie said. "I'd looked everywhere on the night side and hadn't found you. The day side was of course too hot. I was going back to the two ships. Wherever you were, you wouldn't escape the planet. Then I fell in, from a long jump. I couldn't avoid it.

"About seven hours down," he continued, "I began to suspect the truth—that Vulcan is as hollow as a bubble, probably is one, the result of a huge, internal explosion, just before it cooled, ages ago. Some other explosion pushed a hole through the crust.

"At first I thought I'd stop when even with the inner surface. Second thought showed otherwise. If the planet was actually hollow, I'd drop to the center, at a steadily decreasing speed. The law of gravitation says that every particle of matter in the universe attracts every other particle with a force that is directly proportional to the product of their masses, and inversely proportional to the square of the distance between their centers.

Of course, Vulcan being a sphere, there was lateral attraction as well as vertical. The gravitational force pulling me away from center was less than that pulling me toward it, but as I went along they tended to become equal to each other, until, here at the center of gravity,

the forces of gravity neutralize. For every pull from one direction there's another of equal force from the opposite direction.

"We fell to Vulcan's center in a straight line, but on Earth, if it were hollow, we wouldn't. Weight manifests itself in a line somewhat removed from the center of gravity, because of centrifugal force on the Earth's surface. You'd fall in a spiral path. But Vulcan doesn't rotate."

Their two bodies, having tendencies to drift to the exact center of Vulcan, were touching. Colbie pushed Deverel away by raising his knee.

"You've remarked a few times that my taking you prisoner was a joke," remarked Colbie. "What makes you think so?"

"Because there's no way of escape," said Deverel calmly. "Maybe you think so, too, and don't know it. Else you'd have put me in handcuffs, in addition to taking my projector.

"Here's the situation! Vulcan is hollow. I'm sure there's only one outlet. We're at the center. Now how are we going to reach the outlet? It's a riddle, and I know your first guess."

"All right, I'll make it! How about reaction? I've got a hundred rounds for my projector, and—you've got at least fifty on your belt."

"First guess wrong." Deverel mockingly shook his head. "I've thought of reaction—the only thought, incidentally. I was here hours before you were, and I was able to pick the thing to pieces.

"No matter which way you take it, it won't work. Worse than that, it's suicide. Consider. Vulcan is eight hundred and ninety miles in diameter, and hollow. Probably the crust is a hundred miles in thickness—a thinner one would crack up under the attraction of the Sun. That would give us three hundred and forty-five miles to travel by reaction—to the inner surface. Once we got there, our simple problem would be to

find the hole, which is anywhere on the inner surface, quite a considerable area. But probably we wouldn't even get there, because we wouldn't know whether we were going toward the day side or the night side. Or, we might execute circles.

"But let's say we do reach the inner surface. How would we stay there? By hanging onto jutting rocks? Then what if we lost our holds? We'd drop back to center. Then, too, the inner surface is probably a hotbed of chemical action. Where else would these gases come from?" He swept his arm through a short arc, producing a swishing whine by way of illustration.

"It wouldn't be fun to grab hold of smoking-hot spur of basalt, even though your doxite gloves are nearly perfect nonconductors.

"Don't think I'm afraid of taking a chance," he hastened to add. "But this isn't even a chance. It's simply quicker death. We'd drop back, I'll bet a binary, and there'd be a batch of explosive shells waiting for us. They wouldn't travel all the way to the surface, and the least contact with anything solid would set them off. And they'd drop back to center."

COLBIE listened him out, and suddenly snapped off his flashlight. "You picked the flaws in the tube," he said heavily. "But——"

"If it gets to that point," Deverel agreed with the unvoiced thought, "we'll try reaction. Or else, if we can discover some means beside reaction to get to the surface, we'll do that. But——"

There was infinite doubt in his voice. He came out of the darkness, and rubbed against his captor. Almost peevishly Colbie pushed him away. Instantly he was contrite. The situation was too serious for a petty display of anger.

"Sorry," he said. "I'm a little on edge. Come on back."

"I'm subject to the whims of a uni-

versal law—gravitation," Deverel said cheerfully. "I'll be along presently. In the meantime, scion of law and order, that cop's mind of yours should be able to figure out what we'll do in the time remaining."

Colbie did not answer, and Deverel went on talking, in his light-hearted way.

"We could eat, and sleep, think a while, and try that reaction business. Or else we wait until our oxygen tanks run low, and then cut a hole in the fabric of our suits. This atmosphere is most likely lethal."

Colbie's mind agilely grabbed a thought from his words. "Wait a minute!" he snapped. "Deverel—maybe I've hit it. We'll sleep!"

He cut the darkness with his beam, throwing it on Deverel's face.

"What do you know about Vulcan?" he demanded.

"What do I know about it?" Deverel cocked his head in curiosity, and then said, "Vulcan was first discovered in the middle of the nineteenth century by a Frenchman who saw a spot moving across the face of the Sun. But nobody thought it was a planet; they thought it was a Sun spot. Later, everybody forgot about it. Then it was discovered to exist in actuality, when the first space flight was made in the twenty-third century.

"It is eight hundred and ninety miles in diameter, presents one face to the Sun, has an extremely eccentric orbit, has a year of three Earth months; its orbit cuts the plane of the ecliptic at a greater angle than Mercury's; it has a high albedo——"

Colbie cut him off. "That's enough. I'm interested in the eccentric orbit. How far is it from the Sun when the planet's nearest, in perihelion, that is?"

"Little under five million."

"In aphelion?"

"Thirty-eight million miles."

COLBIE NODDED, and again pushed Deverel from him. While the danger both faced had placed their personal relationships in the background, Colbie didn't want to take a chance. At any moment since Deverel had been taken prisoner, Colbie reflected, the outlaw had had an opportunity to turn the tables.

"Vulcan's almost exactly in aphelion now. Listen to this: Suppose we were to take somnolene, and sleep until perihelion, or, rather, near perihelion. The Sun would be——"

Deverel's blue eyes fairly snapped, and his finely cut features lighted up in an expression of revelation. "I've got it!" he exclaimed.

"Certainly. But it doesn't call for that much enthusiasm, does it?" Colbie regarded Deverel curiously. "Are you thinking of the same thing I am?" he demanded.

Deverel hesitated for an instant. He smiled. "I am! You're thinking of the Sun pulling us from——"

"Right. And it seems reasonable, doesn't it? Near perihelion the attraction will be sufficiently powerful to exert a kind of tidal drag on us. We'd be pulled from center of gravity to the inner surface of the day side.

"That would leave us in the same predicaments you mentioned a while ago, except—there'd be no danger of falling back. And, of course," he added with a touch of unleashed irritation, "it'd be like climbing a precipice to reach the hole. But we have to take our chances. No use hanging here, using up oxygen with each idle moment."

Deverel looked at him with an enigmatic expression, and nodded briefly. For a moment Colbie met his eyes with a frown of puzzled doubt; then they bumped against each other again. Colbie said: "You've got somnolene?"

"Got it, but never had occasion to use it."

"It's safe. Carter used it in 2490

when his ship broke down on Uranus. By the time he had it repaired, the fueling station on Ganymede, one of the Moons of Jupiter, was so far away he couldn't make it. He took somnolene, slept fifteen years to conjunction with Jupiter, and made it back from Ganymede none the worse. But we won't have to stay under more than a month—Vulcan makes the rounds in three. How does it sound?"

"Fine. But you needn't ask my advice, since I'm your prisoner, you know."

Colbie's eyes narrowed. He could hardly miss the undercurrent of mockery in the outlaw's manner. But since there was nothing tangible he could put his finger on, he cast the doubt from his mind, at least temporarily.

"Then it's us for somnolene. I don't really place much faith in the idea, but it's a chance, and we couldn't live to perihelion on the oxygen we've got. I wish we could put the stars where they ought to be, as the saying goes, but that's life."

They drifted together again. Colbie smiled a little, and grasping Deverel's shoulders, whirled him around.

"Very sorry," he apologized. "But if you woke up before I did, you might play tricks. There's a look in your eye, my fine fellow. Hands behind."

Deverel's answer to this was to break free, with a sudden twist of his body. He floated away, Colbie's beam calmly playing on him. The outlaw's lips were twisted, almost stubbornly.

Colbie smiled into his eyes. "Oh, no you don't. It's handcuffs for you, Deverel, or else this." He drew his projector, and leveled it at the outlaw.

For a moment their eyes locked. Deverel tossed his head. "You win," he said gruffly.

AFTER A TIME he drifted back, and Colbie snapped the cuffs on with a click.

Colbie turned the outlaw around, flashed his beam on the waist of his suit. Beside the belt holding projector holster, and projectile compartments, there was a row of white buttons.

"Somnolene is third on left," muttered Deverel.

Colbie pressed the third on the left. Instantly a thin rod arose, bearing in its grappling hook clutches a pellet of somnolene. Deverel reached out a tongue, and captured the drug. He swallowed it. The rod dropped back into the spacious interior of the suit, folded up inside the mechanism of which it was a part with a click.

"Water," murmured Deverel. "First on right."

Colbie elevated a thin metal tube. Deverel sucked and sighed.

"That'll keep us under a month. Right?"

Jack Colbie grunted. He watched the other man, noted the glazing eyes, the face set in a sleepy half smile.

Then he quickly swallowed his own pellet. He snapped off his beam, and lightlessness in the fullest sense of the word descended. He hung motionless. Deverel suddenly rubbed against him.

"Happy dreams."

"Good night," Colbie responded. He laughed to himself. There'd be no dreams with this sleep, for metabolism in the body ceased entirely with the introduction of somnolene into it.

His thoughts suddenly skipped into haze, and then, for one second, his mind worked at a furious rate. He found himself saying, "It won't work! It won't work!"

Then he found himself unable to follow the thought. He felt a weight on his eyes, and the darkness of Vulcan's interior rushed in upon his mind. His consciousness dwindled to tiny points of thought. Vulcan—a bubble—not a chance—Kepler! He slept.

HE AWOKE, with the sensation of spinning up from an abyss. Little thoughts came back, added to themselves and presently chained themselves together to perform that miracle called memory. Then he was fully conscious, and conscious of a burst of sound that filled the darkness, and then died away.

"Deverel!" He shouted it. "What the——"

"Oh, you're awake. It's time."

Colbie collected his wits. He drew his flashlight. The beam caught Deverel in the face.

"How long've you been awake?" he demanded. "And what in blue hell was that sound?"

Deverel grinned. "That," he said, "was me. I've been awake about two hours. I'm heavier than you, and the somnolene didn't last as long." He expelled a long breath.

"That sound was just one of the devices I've been using to amuse myself. First, when I awoke, I pushed against you to see how far away I could get. It wasn't far. I always drifted back. I became horribly bored, and started shouting like a fiend. I was just wondering if the sound wouldn't be taken up by the cup-shaped sides of Vulcan, and reflected back a thousand times magnified. I haven't got an echo yet, but I'm hoping for one any minute now.

"Then I sang—terrible. You've noticed how flat our voices are, and that's how, only worse, my song sounded. On Earth there are hundreds of blending echoes for a single sound. There's nothing here for sound to reflect from. And then I gave that last shout you just heard."

"I'm glad I wasn't awake for the singing," Colbie remarked dryly.

He paused, and said slowly, "Bad news, Deverel. Just before I slept, I had a thought. The Sun can't pull us from center."

Deverel evinced no surprise. "I know it," he said calmly. "I've been thinking deeper into the subject than I did before, and have come to the same conclusion. Do you know why, though?"

His arms were twisting around behind his back, trying to ease the stiffness.

"Kepler's Second Law," answered Colbie disconsolately, his eyes on Deverel's twisting arms. "Turn around," he said suddenly. "I'll take those damned things off—must be uncomfortable. And it doesn't make any difference now." He unlocked Deverel's wrists, and repeated, "Kepler's Second Law. The radius vector of a planet describes equal areas in equal times, which is another way of saying that the nearer a planet gets to its primary, the greater is its angular velocity. Which means that centrifugal force equals centripetal."

Deverel nodded. "So we'd have just as much tendency to be thrown toward the night side as to be drawn toward the day side."

THEY lapsed into a silence which Deverel broke by absently humming an air. Colbie looked at him in surprise.

Deverel shrugged his shoulders. "If we escape, I go to prison. The outlook is the same for me, whether we escape or don't. Hm-m-m. We should've heard those echoes by now, if they're coming at all."

Colbie laughed. He wished he could share Deverel's view, but he decided he wasn't that kind. And then he suddenly wondered if Deverel's air of unconcernedness was based on something he knew that Colbie didn't know. Was there actually a means of escape?

His train of thought was broken when Deverel bumped against him again. He shoved the outlaw away, and then he felt himself spinning, head over heels. Suddenly he swept through the short distance separating him from Deverel, and contacted with a thud. He started

spinning again, once, twice, and finally grabbed at Deverel's legs.

"I, too, am gyrating," Deverel murmured, laughter in his subdued tones. He took a quick half spin, and locked his long legs about Colbie's waist.

Colbie put his flashlight in a pocket. "What is it?" he inquired.

"Listen," Deverel replied.

Colbie listened, and heard a murmuring, sighing sound. The murmuring rushed into a whine. Colbie threw his arms around the outlaw. They spun madly, became motionless, and then felt themselves moving at a quickly accelerating speed. Colbie heard a whining, keening sound that gradually grew louder, snapped off, and became a steady, rushing whir.

Then, with an instantaneity that was startling they spun again, gyrating in the opposite direction with such pin-wheel rapidity that they lost their holds on each other.

After a moment they crashed together, the metallic parts of their suits clinking dully. Deverel was laughing as he locked his arms about Colbie. Colbie in turn hung on tightly. He had no time to think matters out, save that he knew they were in the grip of a swiftly moving current of gases. They continued to spin, even as they swept forward at constantly increasing speed.

Minutes of furious, driving speed passed. Colbie's mind became fogged, for the swift rotation of his body sent the blood to his head. Dimly, as from a far distance, he could hear a booming, thrashing, at times screaming, sound. He supposed, as in a dream, that numberless gas currents in conflict were causing the bedlam. The cause of the wind he could only dimly suspect.

HOW LONG their motion in this direction continued, Colbie did not know. But he calculated it to be some thirty or forty minutes. At the speed they had been going, fully half the distance be-

tween center and inner surface must have been consumed. After that time they began decelerating very rapidly. Simultaneously there was a rise in temperature.

Groggily, Colbie hung on to Deverel. To have done otherwise would have subjected them to the bombardment of each other's bodies. Perspiration began leaking through his skin, and soaked his inner clothing. He loosed an arm, and peaked a refrigeration unit up a notch, and gratefully felt the air in his suit cool off. Somewhat irrelevantly he wondered about Deverel's echoes, and decided that if they really had been on the way back to center, they would have been lost by now in shifting volumes of gases.

Gradually they became motionless, both in lateral motion and in rotatory. Somewhere off in the darkness whining, shrieking noises, the product of catapulting winds, still reigned. But here they were for a blessed moment becalmed, swaying back and forth in an indecisive, warm current.

Colbie collected himself, took a deep breath. He released himself from Deverel, and drew his flash. For just a moment he saw the tense, anxious expression on the face of the outlaw, and then it was gone. Deverel was grinning.

"Some wind," he murmured.

"Yes, wind. But why? What caused it?"

Deverel hesitated, and then said, "Well, Colbie, consider. Vulcan's near the Sun, and the Sun's heat worked through the day-side crust. The high albedo of the planet's been fighting the heat, but the Sun got so close the heat sank through. The gases on the hot surface became heated, and came in conflict with cooler gases above. Winds would result."

He assumed an expression of alertness; then his eyes rested, for a mocking moment, on Colbie's. Suddenly he threw his arms around Colbie.

"Hang on! Listen!"

Colbie listened. He heard a moaning, dipping cadence that seemed as if it were infinitely distant. It grew in volume. Abruptly it took on a thousand discordant, screaming, weirdly chilling sounds.

Colbie waited apprehensively. Then, as if some imponderable force had hurled itself against them, they felt themselves flung forward, in a straight angle. There was an abrupt sense of acceleration. Whether this was the same direction they had first pursued, or whether it was perpendicular or at an angle to it, Colbie did not know. Again he and Deverel whirled. Again his mental powers were fogged by the onrush of blood to the head.

THE WIND that bore them shrieked and moaned, and rose to a crescendo roar that culminated in a clap of thunder. Abruptly they were tossed sideways into the maw of a cooler current, and Colbie supposed they were falling toward the day side. The sudden change of direction did little to help him regain his full faculties.

The current which held them continued its straight course. It bellowed, and crooned, and quivered along false minors that were grotesquely plaintive. Then, point blank, it met a head wind. It shuddered, broke up into countless tiny currents that spewed off in all directions. The oncoming wind veered off, and the two men found themselves decelerating, hovering in a gentle breeze that cooled them.

Colbie disentangled himself from the outlaw.

"We can't be far from the day side," he remarked, shining his beam on Deverel again.

"We've traveled a good distance," Deverel admitted. "And," he added, "we're going to travel more. Here comes another wind."

Colbie heard it, an awful, hurrying

sound. He barely had time to attach himself to Deverel before the wind was on them.

It struck them with the force of a tornado. It plowed into them, took them from the grip of the disinterested current in which they swayed, and gave them a tremendous initial velocity. The shock was too much. They grunted, and lost consciousness.

Colbie regained his senses to find that he still held on to Deverel. They were eddying steadily but slowly. He heard a steady drone, tireless, relentless, and indicative of great speed. Though other sounds could be heard, they were subordinated. There was a tiny, far-away scream; a hissing, insidious whisper; a spasmodic, tearing, angry roar, and all seemed fighting for admittance. And because they could not enter, Colbie felt a sensation of security, as if he were in a sanctuary provided by a swift, kindly current.

He relaxed in relief, though danger had certainly not passed them by. Below somewhere, perhaps only a few miles, was the jagged inner surface of the planet.

He felt Deverel move in his arms. Up to this time the outlaw had been unconscious.

Long moments passed. The outlaw chuckled dervishly in his ear.

"What's amusing?" Colbie shouted above the drone.

"What's amusing?" Deverel reiterated. He laughed again, and stilled himself to say, "Colbie, I'll tell you. But you won't like the joke. I've just been thinking how I'll hate the prison bars, and the workshops on Mercury. I am a desperate criminal who needs freedom, so—"

WITH a sudden jerk he freed himself. Then he placed his great space boots against Colbie and pushed—hard.

"So," he concluded, "au revoir!" His voice dwindled away into the darkness,

and was swept away at the last by the drone.

Though the reason for Deverel's sudden exodus was not apparent, Colbie's reaction was sudden. With one hand he sent a beam of light stabbing into the darkness. With the other, he grabbed for his projector, and found it—gone.

Colbie cursed, and continued to send the beam forth. For one instant he thought he saw Deverel, and with flailing arms he tried to make his way in that direction. He contacted nothing of a solid nature, but still he strove.

At last, swearing steadily, venomously, but in real puzzlement, he relaxed. Then he listened. Nothing but the monotonous drone, and the evanescent, pleading sounds outside, met his ears. Deverel was gone, but where had he intended going?

He abandoned action, and put his mind to work. He was spinning again, but slowly.

Somehow Deverel had known a means of escape from Vulcan's interior. Ever since Colbie had mentioned the Sun, he had known it. Colbie knew that now. And since then his actions had been suspicious. He had been more reluctant than was necessary when Colbie locked his wrists together. He had been restraintsive in discussing the currents raging about them. Of course, the convection currents was the whole thing.

Colbie cursed at his own idiotic lack of understanding, for now he knew.

The winds! Sun heat had warmed up the day-side atmosphere; cooler winds had been pushed and drawn from the central portion of the planet as the day-side winds rushed up along the sides of the planet. He and Deverel had been drawn Sunward by falling currents. Erratic currents had grasped at them, some warm, some cooler.

But the main thing was that the gases, in warming, would also expand.

Vulcan was filled to capacity with gases produced within itself. The expanding volumes of gas would have to escape. The only avenue of escape was the hole.

Deverel had figured it out, step by step. He knew they would fall toward the day side in the arms of the descending currents. He had kept his secret merely to keep Colbie off guard. It had worked splendidly. Colbie had had both projectors. Deverel had had ample opportunity to confiscate both. Colbie could adequately grasp his motive there.

"Damned good," Colbie muttered angrily, more in resentment against his own stupidity than against Deverel. "First, he'll use reaction to shove himself into the current of escaping gases. That'll leave me out in the cold, unless I'm picked up by the current anyway. Second, if I do escape, I won't be able to push myself toward the surface of Vulcan when I get out. That'll give him plenty of time to effect a good escape, and throw me off his trail. Smart."

He waited patiently. He craned his ears for sound of a shot, but he didn't hear it. Possibly Deverel had not thought reaction necessary; possibly the bedlam of noise swallowed the sound. Colbie didn't know.

THE steady drone went on endlessly. Then, when Colbie was beginning to fear that he was merely traveling in a huge circle, the drone changed from its monotone to a struggling, beating roar, like that of surf breaking on rocks. It would die away in a furious churning, surge up again into a poisonous, screaming fury, and then recede again to the sound of rushing waters.

Then its velocity broke, slackened, and its mighty, unchallenged superiority was gone, as currents from a dozen angles smote it. A maelstrom of conflicting winds tore at Colbie. He was caught up in a devil whirl, flung violently about, like a puppet attached to innumerable contrarily pulled strings.

Then another purposeful wind stream caught him, transferred to him a sensation of security, and moved him along at acceleration. The temperature arose swiftly, and Colbie felt a leap of joy. He was in the grip of the escaping current!

A drop of perspiration grew on his nose. He blew it off with a breath expelled upward. He waited, bracing himself for the next shock. It came a soul-wrenching jerk, a burst of speed that eclipsed all others. At the same time the screaming and ranting of the winds opposing each other rose to unprecedented heights, and almost destroyed coherent reasoning in an awful cacophonous blast.

Then it was gone, and all that could be heard was a rising, keening note that eventually passed beyond the limit of audition. Another single sound was born, and rose to nonexistence. And Colbie heard a gurgling, choking, belching, sucking polyphony like the death rattle of a giant. He began spinning, slowly, evenly. He knew now that he was on the way through the crust of Vulcan.

Apprehensively he waited, hoping he would not be brushed against the sides of the hole. But the current was twisting, the region of low pressure at center. The greater pressure on the outside of the column, he reflected, would keep him at the center. A tornado, or twister, did the same thing when it sucked objects up.

A second later, he burst into the cold of Vulcan's night. The stars stared down frigidly, as he was spewed forth.

EAGERLY, he looked about. But Deverel was not to be seen, either above or below. He arose swiftly, in the arms of the ascending current. He scanned the billowing, uniformly white surface of the planet from one horizon to the other, but he saw no sign of Deverel.

Down below, not more than five or six miles from the outlet, were the two ships, black cruisers anchored from chance, external forces by metal bits that ate deep into the surface.

Deverel was still inside the planet, undoubtedly. Probably he had tried reaction, but the force had sent him the wrong way. It was hardly possible, Colbie reflected, that Deverel would not be thrown out, considering his own ease of escape.

He went up and up. He suddenly saw the Sun, large as Jupiter from Ganymede. Its boiling rays brought beads of perspiration. He kept his refrigeration unit working at full power.

Vulcan receded, its horizons drawing in toward each other. Colbie kept his eyes on the hole. And then—Deverel was erupted!

He came up, tumbling head over heels. He arose at tremendous velocity, a thousand and more feet below Colbie. Colbie watched, saw him draw a projector, and fire it, straight up. Colbie winced as the projectile whizzed past his ear at two miles per second.

Deverel, however, was not attempting to annihilate Colbie. His purpose had

been to check his own velocity. He succeeded. He came to a halt. For a moment he was still; then he fired again. The reactionary force sent him spinning awkwardly from the up-blast, and down toward the white, wavy surface of Vulcan.

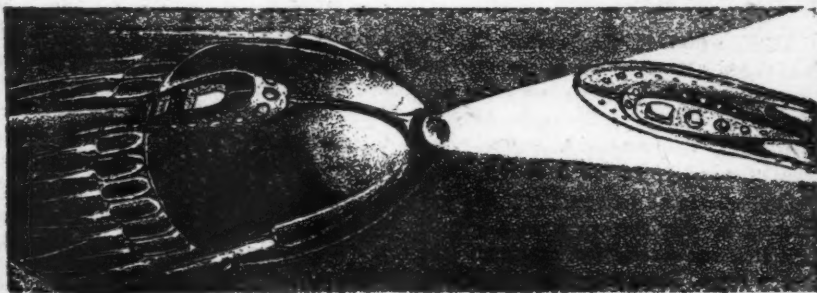
Colbie was still rising when Deverel landed. In a single leap the outlaw reached his ship. Then he stood in front of it, and waved his arms, both of them. Colbie half-heartedly waved back.

Deverel turned back to the ship, worked on the door for a moment, opened, and stepped into the air lock. The door shut after him.

A few moments elapsed, and then the cruiser rose. With a back firing of rockets, it swiftly disappeared into black, star-speckled space. Colbie kept it in sight as long as he could.

He smiled in chagrin. Skid-rayed! He felt like a child who has missed lessons in school. But he found that he didn't really care. Deverel would escape, yes, but not for long.

Hours later, he started drifting back. Bubble it was, but Vulcan had enough pull to save him from the Sun.



GLAGULA

*He came from somewhere in space
—but space charts, too, are relative!*

by Warner Van Lorne

FIVE YEARS and more have slipped away since that fateful expedition into the arctic wastes in 1931. Five years in which Jim Weatherall's hair has grayed at the temples; years during which he has refused to change his address, although business blocks have hemmed his house until it stands alone among towering structures of stone.

Perhaps even I would not understand had he not felt the desperate need to get away sometimes. But he has felt that need—and some one had to remain in his house, some one who knew—

At first he held me to my promise of silence rigidly. But as the weeks became months he weakened.

"If you must write it," he said, "you may—after five years. But do it as a story, as fiction, or you will be laughed at as a lunatic."

THE white blanket spread like a boundless, glistening sea in every direction—clean snow, unbroken by the feeble works of men. Majestic Alaskan mountains, towering only a few miles away, made Jim feel small, insignificant.

One spot in all that vast expanse was marked by dirt thrown from a jagged hole that cut several feet down into the frozen earth. Jim's eyes clouded slightly as they touched it; it represented disappointment.

For weeks, six men had toiled unceasingly, hopefully, tracing the slight showing of gold. They had dreamed of

fortune; but the dream faded. Now they would dig and test at other spots short distances apart. Somewhere in the vicinity of their diggings, the earth held a heavy lode of virgin gold.

Jim Weatherall treasured a map, sketched by old "Sourdough" Graves, who had staggered back to civilization half frozen, with a fortune in his jeans. Storms had buried all signs of the workings before Graves had returned with new supplies, and the secret still waited rediscovery. But Jim, adventure-bent, gathered five friends who were certain they could succeed, where the close-mouthed old prospector had completely failed.

He, Bill Heally, Harold Pratt, John Forbes, and Malcolm Green, invested all they had on the prospect; leaving Tom Hoag, a wealthy young doctor, just finished with his internship, only half the expenses of the expedition to meet! Tom wanted a fling at travel and adventure before settling down to a practice. And because he had been Jim's roommate in college, because they thought and talked alike—and could agree!—he welcomed the venture.

Now, for six weeks they had been digging. But the map showed a general location—not a spot—and the cabin they occupied only placed their work within an encircling half mile!

The mapped area was at the very edge of the belt of thaw which reached its fingers into the North country. The snow never quite disappeared from the

*It was all the six men
could do to carry the
great carcass up the
bank of snow.*



ground. The earth itself never thawed. It was a country of bad storms, with only a few months of the year when men could exist in any semblance of comfort.

Before noon the diggers were nearing the frozen earth surface. The snow thrown from the hole had been piled as a windbreak to prevent drifting into the diggings with the first storm. It seemed useless to erect a shelter before they found the lode.

Jim had left for the snow-banked cabin to prepare a lunch when Tom Hoag whistled suddenly and leaned forward. His companions gazed, spellbound, while he slowly and carefully uncovered the object his shovel had touched.

A few minutes later Jim called to them from the doorway, but there was no answering hail, so he donned his snowshoes and moved slowly across the field. His eyes were squinted against the bright light when he reached the hole and peered down. Then he, too, stood speechless. His five companions were lifting the frozen body of a man out of the hole.

And what a man! Huge! With skin like the surface of an alabaster vase! A body perfectly symmetrical, with features that were strong, intelligent—but somehow alien. The body appeared to be in perfect preservation, as if the cold had penetrated instantly and had frozen a surprised expression on the features.

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JIM RECOVERED from a little of the shock, and hurried to give them a hand. It was all the six men could do to carry the great carcass up the bank of snow. The weight seemed to be far greater than it should be, even allowing for the gigantic proportions. Sweat poured from their bodies, though the thermometer was hovering just above zero.

As his eyes became accustomed to the light, Jim noticed that the man was dressed in most peculiar garments. During frequent pauses he examined the clothing carefully. Leather sandals, with lacings crisscrossed nearly to the knees, were all that protected the legs. A harness arrangement of leather which was soft, pliable and seemingly impervious to the cold which had stiffened its wearer. A light garment, like a silken robe, was thrown carelessly across the shoulders, of a texture which did not seem woven—but rather seemed as if it were spun as a spider spins a thread, continuously in its entire area.

There were beautifully wrought metal buckles, with an opalescent sheen, suggesting the art of craftsmen more skilled than we in the Machine Age have known. And the metal in the fittings was light; lighter than aluminum, yet hard and tough. Bill Heally, testing, found it would cut glass. It was harder than a diamond point!

Very carefully, the body was laid in the snow outside the cabin. It was a find which left Tom's eyes glowing. It meant more to him than gold. Jim helped him stretch a tape measure from the man's head to his feet. Seven feet eight inches!

"What do you think, Tom?" It was Jim who broke the silence. "I thought I knew something about history, but he doesn't fit—and he doesn't look like any of the natives I've seen."

Tom shook his head dazedly.

"I don't know, Jim. I don't know. He is too heavy for his size—too heavy,

that is, for a normal Earthling. I would guess that he weighs five hundred pounds, possibly even more. I have never seen a body so perfectly preserved, as if the cold hit him so quick and hard that it caught him in mid-motion, freezing every cell in his body—like catalepsy.

"He might have lain here for centuries unnoticed. And then again—he may have been here only a part of this winter. I—did you notice the peculiar quality of his skin? And a certain alien effect in his features?"

"Do you mean to say this—thing comes from another world?"

Tom shook his head slowly.

"No," he answered, "I don't mean to say anything, except that I want you fellows to drop me out of the digging business for a time. I want to study this giant of ours.

"It may mean a great deal to the world, historically or medically. I don't know. But I fear that its return to a warm climate might end our chance to study it. Here, if we build a shelter to protect it from the Sun's rays, it will keep forever."

"O. K., Tom, if that's the way you want to play, but as far as I'm concerned, you'll have to play all by yourself. I'm still a prospector! How about you fellows?" Bill Heally asked.

Harold Pratt, Malcolm, and John, nodded and turned slowly away. Jim alone seemed to hesitate, but he caught a slight wink from Tom, and a jerk of the head. So he, too, turned and went back to the cabin.

LONG AFTER his tired companions had gone to bed, Jim Weatherall sat with his head in his hands, thinking. Tom had entered the cabin several times to warm himself by the fire, but had returned immediately to his minute study of the frozen stranger. He was making copious notes. Jim glanced at them once. The condition of

the skin, the veins, the muscular positions, the number of sweat glands.

This was all natural. But Tom's excitement had increased as the hours passed; and it should have lessened! Something very unusual must cause this increasingly eager study, and Jim, feeling the tension in his friend, waited patiently.

At two o'clock it happened. Tom had warmed himself before the fire, never losing his expression of strained expectancy. And as he left he beckoned for Jim to follow.

In a hoarse whisper then, he broke the news with startling abruptness.

"Jim, I think he's alive." Tom watched his friend's face hopefully, fearfully, but Jim didn't answer, and he went on, "I've given him every test that my limited medical equipment allows. I've even extracted a bit of his frozen blood. It's slightly different from ours, Jim, but I believe—I have adrenaline—I have, I think, everything I need. If we take him back to civilization, he's through. I—you've always understood, Jim—the other boys couldn't. Help me through, will you? I want to try to bring him back to life!

"It will be the greatest step forward in the history of medical science if I succeed, and I feel I will. Life might not come back normal. If it doesn't it will be tragedy. But if it does, this stranger will learn to talk to us, and I think we would be surprised by what he could tell.

"Will you help me, Jim?"

Jim's voice was hoarse as he answered. "And if you fail?"

"If I fail?" Tom's words seemed pointed at a distant star. "If I fail, the cold will do its work again, and we will return him to civilization."

Jim nodded solemnly and they shook hands under the arctic sky, like two men who were about to separate forever. There was a fever glowing in Tom's eyes, and Jim caught some of its in-

fectious urge as he asked: "Have you thought how we could keep them"—his head inclined backward toward the cabin—"from butting in?"

Tom nodded quickly. "Yes. I've thought it out. Let's cover our friend against marauders and get some sleep. There's plenty to do to-morrow."

II.

IT WAS expected that Tom would spend his time studying the frozen stranger. So he was able to putter about the camp without raising the slightest further curiosity. The main party returned to the new diggings, and weren't even mildly concerned when Jim lent a hand in erecting a shelter to house the giant's body.

The active diggers were not even aware that Tom had appropriated the spare gasoline stove and the extra tank for melting snow. They did not even bother to look into the makeshift laboratory. Had they done so, they might have been surprised to find that weather stripping made the shack wind-tight, and that the temperature was kept above the freezing point—and gradually increased as the hours stretched into days.

It was on the fourth night, after the aching bodies of four men had relaxed in sleep, that Tom hurried Jim Weatherall out to the shelter with him.

"We've got to hurry," he explained. "The body is close to the point of limpness. Before morning we should know the answer. No sleep to-night."

The tense expectancy which had driven Tom day after day with little or no sleep caught Jim now. His friend's words seemed to come from some vague distance, and he had to force himself to listen.

"The big tank of water is ready, and I believe it will draw the rest of the frost in an hour. We must raise its temperature slowly, almost to blood

heat, before I try restoratives. It may take all night."

Hour after hour slipped away. Tom's cheeks were colored by a hectic fever flush as his mental faculties concentrated on watching every detail of change. Time after time his arm dipped into the tepid water, touching the iron-hard flesh, testing, changing. Both men grew tense. Anxiety was written on brows, which were concentrated on a seemingly impossible purpose.

But slowly the stiffness was leaving the body. Slowly it was returning to a natural state of limpness. Slowly the tepid water became lukewarm. Slowly the thermometer in the shelter crept upward. Time seemed to creep slower and slower as the crisis neared.

Tom Hoag, alone, moved fast, testing every reflex and every slightest hint of change in the cumbersome body; withdrawing a drop of blood as limpness returned to the giant. Again and again he tested the blood. It was not congealing!

After the eleventh blood test he turned to Jim. His voice was a hoarse whisper, for his throat was dry.

"The frost is gone," he said, and together the two struggled until they had lifted the body from the tank and laid it on warm blankets beside the tank.

Touching the limp flesh for the first time, Jim felt a queer, tingling fear permeate his being. But Tom Hoag reacted like a machine. He put Jim to work at artificial respiration, while he massaged the body briskly with a towel. Then he seized a hypodermic needle which lay waiting, and injected a serum into the heart.

Tom devoted three minutes more to brisk massage, then gave a second injection, then a third. Jim was tiring, and Tom replaced him astride the barrel-like chest, never losing a stroke in the artificial breathing. Time was forgotten. But it seemed like hours to their aching muscles. Jim again re-

placed Tom. The giant's cheeks were beginning to show a touch of color.

Tom took Jim's place again. They had forgotten everything except that the color of life was coming into the face of the stranger. Time passed, and tired muscles shrieked messages even into their excited brains! They forgot how often they changed places. Jim was working now, forward and down, up and back, motions timed to normal breathing. Tom took a long chance and injected another shot of adrenaline.

When Tom once more took up the work, Jim gasped as he glimpsed the gray of early dawn through the crack under the door. It brought a new fear that they be disturbed on the verge of success. He heard Tom exclaim, and saw him stop moving. Jim's tired eyes focused slowly on the huge body, then for a second time sleep was washed from his system in an instant. The strange giant was breathing naturally, unassisted!

He sank to the floor, his aching muscles quivering from the strain; but his brain raced. They had succeeded! The giant was coming back to life!

Tom emptied a hypodermic into the pulsing arteries, and wrapped the living body tight in the blankets. He turned up the stove and the heat hovered around eighty in the tiny room. The stranger was sleeping. He moved slightly in his sleep!

Tom Hoag's face glowed with a mixture of exultation and accomplished desire. Jim's reflected incredulity; an inability to believe his senses as he kept glancing toward the sleeping stranger.

Tom's voice broke in on his thoughts. "Jim, can you keep our prospectors from coming over here before noon? Try? Our new friend will sleep for a while; I've seen to that. You'd better not return until they've gone to work. He may be awake by then, and I may need you."

The words sobered Jim, and he nod-



The two men from Earth remained quiet, as pictures of this strange giant's civilization flashed through their minds.

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ded slowly. The great fear still remained that the man's brain might not function properly. Or if it did, he might be a savage, and with the strength of that gigantic body, Tom might well need a friend when he awoke.

THREE HOURS LATER Jim opened the door to the shelter, fearful of what he might find inside. There had not been a sound or a word from Tom since he had closed the door behind him and returned to the cabin.

But now, as his eyes adjusted themselves to the half light, he found two men looking at him. One he knew. The other? His knees felt suddenly weak and he sank down beside the door.

For several minutes Jim Weatherall's fascinated eyes were glued to those of the giant. He noted that although the temperature made perspiration boil out on his body, the stranger seemed to hover close to the stove, as if he were cold.

"I'm glad everything's all right," Jim said hoarsely, and to his amazement it was the giant who answered. In some unknown tongue, to be sure, but unmistakably in greeting.

Tom smiled.

"I've been talking to him for an hour, Jim. His brain is O. K. And he is enough of a master of thought transference so he can not only read our thoughts, but can transmit his own clearly to us. He is, as I suspected, a contemporary. At least, we think so. He hails from another planet, but since names do not match up very well, I am unable to place it exactly as yet. You see, he studied the galaxies from a different viewpoint from ours, and it might take days or weeks to orient the two viewpoints and discover whether he means one of our familiar neighbors, or whether he hails from some unknown world in the outer galaxies.

"However that may be, his world is smaller than ours, and because of its lesser gravity its people have developed a greater weight and size. His world is close to some sun, for it maintains a constant heat much greater than we have in this room. As nearly as I can understand it, he never knew the meaning of cold until it gripped and froze him. He had not gone far from his space ship before it happened——"

"Space ship!" Jim exploded. "Space ship? You mean to say——" He glanced toward the giant, who was smiling and nodding his head affirmatively.

The man understood everything they had been saying! Shivers of fear began to crawl in Jim's spine. The giant was looking directly into his eyes, and Jim could feel his thoughts, but the message he felt was reassuring, and his fears relaxed.

Tom's words seemed almost to break in on a conversation when he said:

"Yes, Jim, he came in a space ship which cannot be far from here. He may have landed centuries ago. We cannot know until he can check the galaxies for time position by means of his instruments. But it seems more reasonable to believe that he is a contemporary and that he may have landed no longer ago than early in this present winter season."

The giant's thought images had withdrawn as Tom spoke. Jim had to jerk his mind back to the words. They seemed to grate after the wordless understanding thrown on his mind by the giant.

"What do you call him, Tom?" Jim was curious.

To his surprise, the giant answered: "Glagula!" The man had understood the thought behind Jim's words. He repeated, "Glagula," as he pointed to himself, then "Tom," pointing, and finally "Jim" as his finger stabbed forward.

FOR SEVERAL MINUTES Jim looked into his eyes, suddenly realizing—they were getting acquainted, as if talking with words. After a moment it seemed a natural way to converse. There was nothing strange, except that he had never done it before. A country of heat slowly formed in his mind, not too hot to live in, but comparable to the heat of the Sahara. There were beautiful buildings, with green lawns around them. The people seemed happy and not out of proportion—they were all the size of the giant. His people; the race he came from, with the same characteristics.

Huge ships sailed majestically overhead. They did not appear to be made of metal; they looked more like frosted glass. They were all lighter than air machines, resembling a tear drop in shape, beautiful beyond description. There were moving tracks in the streets for transportation. Everything represented a higher civilization than that on earth. The architecture was strange, with a foreign beauty.

Every mechanism, as well as the buildings, were placed in what would be considered a rural atmosphere on Earth. Green growth covered as much space as the structures, giving a very pleasing effect to everything. It showed planning well ahead of development; an understanding of a future far beyond the point of Earthtime.

Suddenly his mind was snapped back to see the giant smiling at him. Tom was smiling, too. He knew what had been passing between the two minds. Then Jim smiled as well, and held out his hand to the stranger from another world. They had become friends in the few minutes of perfect understanding.

Three men, two from Earth and one from untold distance, sat for a long time with pictures of the world and its civilization pictured in Tom and Jim's minds while the giant returned the pictures of his own land. There were many things

beyond comprehension in the strange country, and Glagula tried to explain by showing their action. But the cars remained a mystery. There was no source of electric energy, no power plants of any kind, yet they traveled smoothly at terrific speeds.

The greatest wonder to the giant was the cold and snow. He could not comprehend heat, and try as they would, they could not explain it to his satisfaction. He had never known any relative heat values. On his native planet they did not exist; his people used a different means of manufacture. The power came from some source the Earthmen could not understand.

After struggling to make their thoughts understood for several minutes, Jim got so excited he burst into speech. "Darn it all; it's as——" Then he stopped as they all burst into laughter. All restraint between them was gone.

At a slight sound Jim glanced up. Malcolm Green stood in the doorway!

For a moment he stood frozen, his eyes trying to pop out of his head. Then, with a groan, he crumpled in a faint! The sight of a corpse come back to life had been too much.

Jim carried him outside and rubbed snow in his face until his eyes opened, and he looked wildly around. Jumping to his feet, stark fear in his face, he glanced toward the small building, then ran like a wild man toward the cabin.

III.

LUNCH TIME had come and the prospectors had returned. Finding Jim absent, Malcolm went searching for him. Jim realized the party had to be told, and from the sound of excited voices Malcolm was telling plenty. But what could he say? Eyes peered around the corner of the building, but none came to investigate.

Jim decided to let them talk for a few minutes and went back inside. Tom

and the giant, too, would want to eat. He could tell his story while he got lunch.

The men were still talking in awed tones mixed with fear when Jim entered the cabin. Malcolm still looked as if he had seen a ghost. There were strings of questions waiting.

"Don't look as if you'd seen a ghost, Malcolm. He is a human being. Tom brought him back to life. We knew you wouldn't have put up with the experiment if you had known, so we kept it secret. You happened to stumble in there before we told you.

"The facts will astound you. He's not of this world, but from another planet. You will want to get acquainted with him——" Suddenly Jim stopped. They were looking at him as if *he* himself was a freak from another world. They could not believe him!

For a moment he didn't comprehend. Then the truth struck him. They thought he was trying to joke at the expense of their common sense. When he knew they didn't believe, he stopped.

"All right, then, come over and see for yourselves. He won't mind, and then you will know."

He started toward the shelter, but they were slow to follow. Malcolm wouldn't budge, but the others came slowly out of the door; looking as if they expected to go through a terrible ordeal instead of displaying any interest in what they might find.

When they reached the doorway they stopped. A green pallor slowly crept up Bill Heally's neck. The giant was facing the other way, and they watched for a moment before he turned to them. This was too much, and with one concerted rush they headed back for the cabin to join Malcolm. If there had been any way of fast escape from the spot they would have taken it without a second's thought.

The giant was plainly puzzled, but Jim explained their actions as best he

could. A frown appeared on the creature's forehead. He seemed to be thinking. Tom and Jim, watching him, were puzzled trying to fathom his thoughts.

The door opened again and the four men walked in, looking straight toward Glagula. For the first time Tom and Jim felt a slight fear. The rest of the party was helpless to oppose his will.

The room was small, and with seven in it there was hardly air to breathe. When they were all standing around the wall facing him, the giant seemed to release them. They looked startled at first, then fear showed plainly. When he looked at them to make his thoughts known they were more fearful than ever. There was no possibility of a friendly understanding immediately.

The stranger gave it up with a sigh. These men weren't worth bothering with. When they felt free to leave there was no time wasted. The door shut behind them before either Tom or Jim could say a word.

It was a long time before Jim started back to the cabin. His friends had disappointed him, but he realized they were no different than the majority of the human race. It left him with a sort of empty, insignificant feeling toward his own.

The giant was watching, reading his thoughts. Jim understood when Glagula let his mind say he was sorry things had to be that way. He had hoped to visit the world and learn its secrets; but he knew now that it couldn't be done; he would be a freak. There was no hope that a stranger from another planet could pass among the world of men without creating a sensation.

Jim finally went back to the cabin. His four comrades were too upset even to ask questions. They talked together, in tones too low for Jim to understand. The little party seemed suddenly divided into two groups, an invisible barrier between them.

THE rest of the day Jim spent in the small building with the giant. He and Tom thoroughly enjoyed the company of the stranger and spent hours in silent, mental conversation. They learned many things about his strange country and told him many things about their own Earth.

The others wouldn't come near all afternoon, but toward dark they came in a body to stand for a few minutes and look at the man. He paid no attention, did not try to create any mental contact with them. When they thought they had done their duty, they turned in a body to retrace their steps to the main building.

Somewhere, only a short distance from where they found the man, was his ship. It must be covered with snow, as he had been. The man could not have gone far with his light clothing in the arctic cold.

It was a fairly flat plain where they had camped and there was not much opportunity for anything of any size to be hidden by the snow. There was a slight ridge of snow a few hundred feet away, but after spending several hours digging they struck earth.

A dome of ice a half mile away had never been investigated. Now it caught their attention. They were tired from shoveling snow all day, but the possibility of seeing a strange ship gave them new energy. Each man had created a different idea of the ship in his own mind. But they all knew it must be something strange to conquer space.

When they drew closer, this dome appeared like ordinary ice, yet it was not until they had examined the exposed surface carefully that they knew it ended the search.

If a petrified whale had been covered with snow and the skin had the glint and appearance of green glass; that would describe the sight clearly. With one end large, it tapered to very near a point at the far end. It was impossi-

ble to hold a footing on the smooth surface except directly on top, where there was no slope.

The ship must be quite large, as the section above snow was nearly a hundred feet long and the widest part over thirty feet. The surface had the appearance of glass that had been walked on by thousands of feet until it no longer allowed any one to see what was inside.

The five men walked back and forth, examining every inch of surface. It looked to be perfectly round at the large end. If they had not been looking for a ship it would have been passed unnoticed as just another peculiar ice formation. Upon careful scrutiny they could see fine hair lines in the surface, spaced evenly. These looked like very fine welded seams. It was a certainty, the ship was built of separate pieces. Jim had more than half expected to find it was just one huge casting of some kind.

They went to work, and before dark made a good impression on the surface. It would take weeks to uncover the whole ship, if there were enough of them to do it, during the time between storms. Darkness caught them before they had uncovered many feet more than was clear when they found it.

The whole party was excited; Jim was the least affected of the group, for he had grown more accustomed to strange things. The others were more interested in the ship than they had been in the strange man. This was something they were not afraid of; it did not seem superhuman.

The next morning they were back at work as soon as there was light enough to see by. Instead of digging along the edge in different places, they went to work in one spot and soon had exposed quite a bit of the side. This area was gradually extended, and before lunch, what appeared like a port in the side was uncovered. From then on the excitement knew no bounds.

They did not want to stop for lunch, but finally gave in when nothing else was found in an hour.

THE AFTERNOON passed the same way, until just before dark. Then the snow where they were working slid into a large opening in the hull. It was a port! Frantically the snow was dug out of the way and thrown to the side until the passage was clear enough so they could crawl into the entrance by getting down on hands and knees.

It was too dark inside to see more than shadowy outlines of objects, but these set imaginations running riot. They cleared away enough snow outside so there was no danger of the opening being covered again by wind. It was shoveled back and banked as a windbreak. When they turned toward the cabin it was pitch dark.

The news of their success was welcome to Glagula. He listened as Jim told Tom what he had seen of the ship. He described it in detail, but it did not seem to interest Tom to a great extent. He was satisfied to just sit in silent understanding with the giant.

It was tiresome for Glagula to sit indoors all the time, but the cold was a real menace to him. Used to much greater heat than the other men, the cold had that much greater effect. He even felt a chill when the door was opened, although it was uncomfortably warm inside. There were no clothes to fit him, and he had to get along by just wrapping blankets around himself for warmth.

The giant seemed to take a slight liking toward the others when he realized they had spent all day trying to dig out his ship; but he and Tom seemed completely satisfied with each other's company. There was a potent bond between them. Tom was building a live interest in the other man's world and listening, mentally, for hours, to descriptions of the civilization shown to him.

Jim joined the main party just after daybreak in a hurried breakfast, then returned to the ship. The fever of curiosity was burning in them all.

They entered the ship with a feeling of looking at another world. Things were strange, but there was some equipment which there was no mistaking. Rooms with sleeping equipment were built along one side, adjoining a well-stocked galley. Many strange foods were stored on the shelves in wrappers of thin material which evidently replaced cans for preserving.

There seemed to be no direct passage from the section they entered to the rest of the ship. This puzzled them considerably. There was a blank wall running through the middle of the ship, lengthwise, with no break in it. The section with the sleeping rooms and galley was only about thirty feet long, but search as they might, there seemed no way to enter any other part of the ship.

They searched every inch of wall without success, and were about ready to give up in disgust when Jim realized one of them was missing. Bill Healy was *gone!* He had been standing with them a minute before. John Forbes went out to see if it was possible he could have headed for camp without saying anything. There was no sign of him.

The four men began to have creepy feelings along their spines. Even Jim felt that something was wrong. After thinking for several minutes they placed the spot he had been the last time they noticed.

There was a small space side of the galley, like a small storage space, without anything in it. Harold Pratt remembered Bill examining that space, and no one could recall seeing him afterward. Jim approached the opening with a feeling of unexplainable trepidation.

It was perfectly plain, with no sign of opening except to the passage they stood in. After a careful examination



The control cabin of the ship held their attention for quite a while. Jim stopped Bill just before he tried one of the levers experimentally.

he stepped inside. It was just large enough to hold one man the size of the giant. He looked over the wall, but there was nothing; then some one was shouting in his ear.

"Help! Help! Oh, is that you, Jim? I thought I had gone a little bit nutty. I was with you fellows one minute—the next I was in a different part of the ship. Boy, am I glad to see you!"

Jim's mouth hung open. He was no longer where he had been! He was with Bill Heally. The others had dis-

appeared. Then the truth of what happened cleared, although he did not try to understand.

THE SPACE he had entered was the means of getting from one part of the ship to the other; but he had felt no movement. Before him was the nose of the craft; there was no mistaking it. A clear vision plate was before an instrument panel, with odd charts and dials set in a sloping board overhead. The simplicity, yet the feeling of great

power, held him in its grip for a moment before he stepped forward to examine at close range.

As he bent over to see the small levers and buttons there was a commotion behind him. Harold Pratt was in the room with them; a second later John Forbes and Malcolm Green joined them. They had got up nerve enough to follow.

The control cabin held their attention for quite a while, and Jim stopped Bill just before he tried one of the levers experimentally. "Don't! There might still be some power in this thing. We don't want to find ourselves out in space somewhere."

It was a different matter to get out of the room again. The door or elevator—they never decided quite what it was—would not work. It evidently was automatic from only one direction. From this side it did not seem to operate.

Jim thought over every possible solution, but nothing would answer. As he stood in it, after giving up hope, he thought of the galley—and found himself back there. For a moment the full significance did not appear. Then he realized—it was actuated by thought waves. When the truth was brought home he could not force himself to approach it again for several minutes, but the thought of the others caught on the other side made him find nerve enough to reënter the space.

He was back with them before he had time to think what was happening. He explained, then experimented himself. He was not satisfied to stop his trip through the ship if there was any way to continue. Trying out a different thought, the action was very slow. He thought of the engine room, but evidently the mechanism could not understand just what he wanted.

He stood for two or three minutes; then, as if it had figured out what he wanted, like a human brain, he was sud-

denly at the point he wanted to reach. It was uncanny, but it worked. He returned, after some trouble, and persuaded the others to follow him. He knew what the room looked like, and the "space that moved" as they nicknamed it, carried him back without a hitch. The others appeared a moment later.

It took them some minutes to recover from the feeling of mystery enough so they could enjoy their surroundings. The warmth of the ship began to affect them. Excitement had been enough to hold their attention to other things before.

It must have been close to a hundred inside the hull. There was some source of warmth beyond their understanding. Everything in the ship had the same temperature, yet this did not affect the snow lying against the hull. Their heavy garments began to come off one after the other to hang over arms as they continued the tour.

The engine room was a disappointment. There was nothing to see! One huge box, or case, in the center was the only object aside from a few gauges on the wall. It was very plain, with no sign of a motor to drive the ship. There was no possible way for the box to connect with the outer hull so as to give driving force. It evidently employed some unknown power.

The rest of the small party was willing to follow Jim, as if they felt *he* was the only way to get out of the ship. He led them from one part of the hull to another, but there was not a great deal of interest to be seen. Too many of the things were not understandable.

He found that, thinking of any part of the ship while standing in the space that moved, placed him there instantly. They could tour the whole hull without trouble. Each time he went to a new room he returned to the others to tell them where to come, otherwise

they might find themselves in separate sections.

One big storage room was very interesting. They spent a long time there. Food enough to feed an army was stored away in neat tiers. It was very interesting to look at food that only faintly resembled any on Earth. The containers were semistiff, but of very tough material.

IV.

IT WAS NOON before they returned to camp. Time had flown. Jim got lunch and took it over to Tom and the stranger before he told them of the further discoveries.

They tried to figure out some means of transporting the giant to the ship. There he would have a warm atmosphere, with room enough to move around. But there seemed no way to get him there without exposure to the cold. The only possible method was to wrap him in heavy blankets and draw him on the sled they used to move heavy things around camp. Even that would be dangerous.

Jim was certain the heat in the ship was sufficient to make him comfortable, with room to get a little exercise. He hadn't been able to move more than a few feet from the time he was revived. The ship would make more comfortable living quarters for all of them.

During the evening he spoke to the others about moving the stranger, and they joined him in trying to devise some way. The relief they would feel at being separated farther from him, rather than his comfort, drove them to think of every type of conveyance. They decided finally to construct a shelter on the sled—not very big, but large enough to hold the man—which could be heated enough to keep him from freezing.

In the morning they went to work building the shelter, and installed one of the small oil heaters. With padding, it

would be very comfortable, and they could move him safely. Before dark it was finished, but they waited until the following morning for the trip. The sled with the shelter was heavy, and with the man inside, it would be a terrific task.

Jim returned to the ship and made sure it was heat, and not just imagination, which made him sweat inside the hull. The temperature remained the same. The heat had a peculiar quality, very much the same as rotting vegetation casts off.

ANOTHER EVENING passed while Jim and Tom spent their time in silent exchange of thoughts with the giant. He had a wonderful mind, and it was a pleasure to be able to see the visions passing within that brain like a marvelous moving picture, displaying scenes of surpassing beauty, set in a strange land.

The pictures were so clear Jim felt he would know where he was if suddenly transported. Many of the sights were beyond his faintest comprehension—too intricate for minds unaccustomed to their use. Great machines with slowly moving parts, performing tasks of every description. There seemed no speed to any of the big machines, just silent, powerful forces working at a majestic rate. They did not strain; there was ample power without effort.

The means of transportation were very odd. For all surface travel this world used moving platforms. Through the rural districts these were units; but in the cities they were a steady-moving belt. Set on the level with the ground, it was simple to get on or off. Where there was high speed required, they changed from one track to another with a gradual increase in speed, until the platform was flying along at many miles an hour. On the faster tracks wind-breaks protected the riders from the blasts as they shot forward, but nowhere

was there a ground track with any kind of cover.

There was nothing to show any sort of protection from storms. They were not prepared for them, and evidently did not have any. A strange world indeed, without fear of the elements. A land of perpetual sunshine, for the sun never dropped below the horizon. The glow of sunshine came through a constant filming of mist, diffusing the light evenly over the landscape. The sun changed position every few hours, and sank toward the ground only to swing up again before it could dip below the rim of the horizon.

The planet seemed to be very close to its sun. The only reason it was habitable was the protection of the thick cloud banks, throwing back the rays before they could touch the surface.

Jim asked about the other side of the planet with his mind, and a great fear and dread of the dark surface showed plainly on the giant's face, while his mind showed such strained and tortured pictures it was hard for the Earthmen to follow the thoughts. They turned their minds quickly away from this nightmare.

Animals vaguely resembling the domestic beasts of Earth, but of much greater proportion, grazed in the sun-lighted fields. There were, unmistakably, some milch animals. These resembled the nearly extinct bison of the western plain more than any other type of Earth animal. They appeared as gentle as cows, and were handled and trained the same way. They were also the great supply of meat, and huge herds were raised for the city markets.

Glagula held some exalted position among his own people, wielding power and influence. Tom and Jim relived the start of the interplanetary flight, saw a vast crowd watching him take off. There were two others in the party when they started, but a terrible ex-

perience on a small planet midway to Earth cost both their lives. Glagula carried many scars from the encounter with completely savage beings. Truly, the trip between planets had been a great adventure.

Slowly the thoughts faded as the giant looked at Tom and Jim expectantly. They followed with complete pictures of Earth civilization. Several times Glagula stopped them to have the pictures of heat and fire gone over a second time. Heat seemed completely beyond his comprehension; fire stirred a strange unrest in him. He had displayed great fear of the stove at first, but gradually became accustomed to it. Any flame or intense heat was far too great a wonder for him to try and understand.

Several times he tried to show his lack of understanding, and had them explain different means of controlling fire. When they showed pictures of big fires destroying buildings, with men working to stop the spread, a satisfied expression appeared on his face, as much as to say, "I knew it, they can't control it." This was amusing at first, but there was no question but what it presented a fearful picture to him.

Steam power was a strange force to him, although he seemed to have a very good understanding of electrical energy. A gasoline motor was another marvel when he saw heat harnessed directly for work. These Earthmen certainly had to fight hard for existence, conquering terrible monsters of power to do their work. He was satisfied to live in his own land.

IN THE MORNING they heated the sled shelter to the point where the rest of the party would have been exceedingly uncomfortable, yet it would probably feel cool to the giant. It was warm enough to avoid danger in the short trip, and the stove, installed, would hold the temperature.

Before noon they were ready, and the giant was shut in the shelter for the heavy haul to the ship. Tom joined the others in the long pull. It was more of a task than they anticipated, with a man weighing over five hundred pounds inside. The snow was soft and the runners cut deep, but slowly the distance was covered.

The sled was too large to be pulled into the port, and the giant had to enter the ship himself. It gave him a chill that lasted several minutes from exposure to cold for only a moment, but there were no ill effects once he was in the warmth of the interior. The cold seemed to penetrate every pore in his body in a moment. They massaged his hands and feet to return the circulation to normal. A moment in the cold for Glagula was as serious as an hour for the Earthmen.

In many ways the giant was a very hardy individual, but cold broke down all his resistance. His skin whitened as if frosted, and the same treatment was used as if he suffered from frostbite. Only they used lukewarm water, heated hurriedly on the stove. Snow would have been disastrous to him. It remained a mystery how the man could ever have traveled so far from the ship when he landed. He must have suffered untold tortures.

Glagula was happy. The ship was home to him. He went through one section after the other with eyes glowing. It was *his*; a breath of the home planet—comfort such as he had not known since returning to consciousness. Everything was in perfect condition. Nothing had been injured by the exposure to cold and storms.

It was lunch time, and Glagula invited them to have lunch with him. Tom and Jim were delighted. The others hesitated for a moment, but they, too, joined the party.

The Earthmen sat down to the strangest meal they had ever known. Meat

of unknown flavor, but very delicious, with vegetables tasting as fresh as if just picked from the garden. Nothing had any of the taste of preserved food. It was fresh! To the little party, who had been in a frozen country for many weeks, the green foods were a great treat. Secretly they hoped the invitation would be followed by more.

Clear, cool water replaced the melted snow they had lived on for a long time. The water was warm, as Glagula drew it from a small container on the wall, but Bill took the glasses, or glassite containers outside for a moment and returned with a drink they would have walked many miles to receive.

The water tank was a puzzle. There was no way for the water to enter it, yet they drew off more than the tank could hold, and the giant offered them all they could drink without fear of exhausting the supply. The men were not slow to drink their fill; it was worth more than all the strange food he could offer.

Harold Pratt disappeared after lunch and returned with every container he could find in camp to fill with the fresh water. This seemed to amuse the giant immensely, but he let him have all the water he wanted. Still the tank did not show any sign of emptying, but continued to flow as if it tapped an endless supply.

Tom and Jim accepted two of the staterooms in the hull. It was uncomfortably warm, but worth the little discomfort to be able to spend more time with the man. He explained as clearly as he could the operation of the ship, but its principle of action remained vague in their minds. The power supply was intact; the ship seemed to be in as good condition as when landed.

The others returned to sleep in camp. Tom and Jim could not persuade them to enjoy the comfort of perfect beds for a change. They still could not accuse themselves to the proximity of the

giant. To them he remained a mystery man, endowed with superhuman power. They had not forgotten his bringing them into the small building under control of his will. They did not actually fear the man, but safety was the better part of valor.

When the three were alone, Glagula smiled and a thought reached them. He was going to give Tom and Jim a treat. He called them into the pilot house, and after looking over the instruments, pulled a small lever.

A slight vibration throughout the ship resulted. Then he moved the lever back farther and the ship moved free of the snow. When it stopped, it hung several hundred feet above the ground. The rise had felt more like the swift motion of an elevator than any other motion. Their breath was taken away by the ease with which the ship had forced itself out of snow that would have taken weeks to clear away.

Power beyond anything they had ever dreamed! Power under perfect control, ready at the touch of a hand! A ship operated without a single moving part! No propellers, no blast tubes, nothing that seemed able to move the ship, yet it sailed as easily as if an invisible hand were lifting it.

The marvel of the action held the two Earthmen spellbound until the ship settled again, this time only a few steps from the camp building. They could picture the consternation of their friends when the ship was found just outside the door in the morning.

Jim went to bed, to spend a night in the greatest comfort he had known in several months. The bedding was soft, and warm without weight. As he sank into the mattress, vents opened in the inner hull, and cool air soothed him. He had worked hard, with very little sleep, for several days, and there was nothing less than a cannon under his ear which could disturb him.

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WHEN he finally awakened the ship was moving. He jumped out of bed to peer through a small clear plate in the wall. They were slowly sailing across the flat plain. The ship went nearly to the mountains, then made a slow circle and sailed back. There seemed to be no reason for the action, and he hurriedly donned clothes and went to find the giant.

Tom and the stranger were bent over a small instrument in the pilot house when he reached it. They did not at once notice his presence. It allowed Jim to tune in on their mental conversation. The thoughts of the giant were strong enough for him to understand without effort.

"I am glad, Tom, that you have decided to go with me. I will enjoy your company on the trip, and a man with your knowledge will have a place waiting for him in my world. It is well that we are able to give your friends what they sought without success. It would be wise for you to leave all that should belong to you to your friend, Jim. You will have no more need of anything here."

One thing was plain: Tom was going with the giant! It seemed like a return to the strange planet—but could it be?

They felt his presence after a minute, and Tom looked up to see the questioning expression. "You know what we plan, Jim. Don't try to change my mind. It will be a great adventure; life may hold more there for me than it possibly can here.

"We have been searching for the gold lode on the plain. It is only a short distance from the spot we were working, and shows signs of rich ore. It will probably make you all wealthy. I want you to have my share. The others will have enough without taking mine, too. You and I have been close friends, while I owe them nothing.

"I will tell them you're going to have my share so there can be no mistake. I don't want them to know what's going to happen. They will take my word about my share just in case anything happens to me.

"Some day I'll return to see you if I can. I would like to have you with us, but you have a family. I have no one."

It was a great adventure—a dream of stars and galaxies—of infinity.

When the ship finally settled down they had checked and rechecked the location of metal. There could be no mistake. Glagula's instruments told the location as plainly as a map, and they set the ship down a few feet from the spot.

The others had been watching them circle around, and came rushing to the hull. Tom let them in and explained there was enough energy to still move the ship a little, and they had located the gold. Forgotten was the ship and the stranger. To Glagula's great amusement they rushed for shovels to start work. *Gold!*

GOLD! What was a stranger from another planet compared to that. Before they started digging, Tom stopped them.

"There is just one thing more, fellows. I feel I may never reach civilization to use my share. I want Jim to have all that belongs to me. You'll each have sufficient to take care of you the rest of your lives, if it turns out the way it looks. Will you promise now that Jim gets all that belongs to me if I don't get back?"

They were quick to promise. He was holding them up from the work. What a lot of foolishness! The gold was the important thing. Nothing else mattered.

Jim watched them hurry out, then

turned to Tom. "When are you leaving, Tom? It will mean a lot to me to see you go."

"We figure on starting as soon as my things are all on board. There is no point in waiting. The others will hardly miss me now. They're too excited. Some day I'll be back, Jim. I don't want to live this life out without seeing the Earth again. If you need us—send for us."

Jim helped carry the bags aboard and silently shook hands. When the giant gripped Jim's he thought it was going to be crushed, but kept a straight face. It was real friendship. He turned and walked slowly out of the open port. It slammed to behind him.

In his hand was a small piece of metal set with a peculiar stone. The giant had handed it to him as he shook hands.

Slowly the ship rose above his head. Tom waved from the clear plate in front. It rose several hundred feet, then started forward and slowly increased speed until it traveled like a bullet over the mountains in the distance. Jim finally turned away, a catch in his throat.

THEY FOUND their gold and returned wealthy men, but all lips were sealed in a pact of silence. They claimed Tom was lost in the snow and never found. It was as good a story as any that would be believed. Even Jim sometimes caught himself believing—but there remained an empty spot his friend had filled. Then he would look at his memento—a strange stone—not ruby nor emerald—not even of Earth. And Tom had promised to return—he never broke a promise!—that fact and Tom's last words, "If you need us—send for us." Somehow that stone and Tom's words were linked together in his mind!

*A scientific
discussion*

Accuracy

*The first article in a
fascinating series which
will include the entire
solar system*

by John W.
Campbell, Jr.

*Tycho
Brahe's
Quadrant*



PRACTICALLY no statement made in this series will be exactly accurate, perhaps a tenth will be inaccurate to the point of virtual uselessness, and at least a twentieth will be wholly wrong. But that is the fault of lack of preparation, and lack of time to study the subject. Men have had less than one full century to use telescopes with the necessary accuracy.

In astronomy, time is so immensely important because errors and displacements become cumulative and hence observable. Pluto was discovered because

over a period of years systematic mapping of the heavens by photography had been carried out, and finally enough time had elapsed so that the cumulative displacement of Pluto's slow motion in its orbit built up and added till it became a visible difference between a plate several years old and a comparatively recent plate. Time is important.

Accuracy is important; by it a theory may stand or fall. Newton's theory of gravitation was right but inaccurate. But it took cumulative work over years to detect the slight difference Einstein's law expresses.

In 500 B. C. the Greek philosopher Philolaus advanced the theory that the Earth revolved on its axis, and followed an orbit about the Sun; others followed and agreed with him, though the general belief was in the apparent immobility of the Earth, with moving Sun, Moon, and stars.

In 100 A. D. the two theories were in existence, and Ptolmey worked on the theory of the stationary Earth. He combined his mathematical observations with observations of the planets and the Sun and Moon and finally, by immense labor, he developed the theory of cycles and epicycles: a rotating dome of heaven, across which the planets, the Sun, and the Moon moved, following a series of curved tracks.

Without the data represented by knowledge of gravitation, inertia and action and reaction, both theories seemed equally tenable—the rotating Earth going about the Sun and the rotating bowl of heaven. Then the two must stand or fall by test of observation.

Ptolmey's won, because Ptolmey's was more accurate, not because people liked it better. Sailors don't worry about how they like a theory, they want it to predict where they can look for star or planet to guide them. Ptolmey's did, more accurately than the theory of the orbits.

Accuracy had defeated the circular orbit by 125 A. D. At that time, the human eye being a very old observational instrument, and already at about its peak, there was little change in accuracy. Not till nearly 1600 was sufficient advance made in observational accuracy to detect errors in Ptolmey's theory.

About 1600 A. D. Tycho Brahe was doing his work. Tycho was a crusty old man, then, and not at all a theorist. He was not above practicing astrology, in which he did not greatly believe, to gain ends in which he thoroughly believed: bigger and better observational

AST-7

instruments, in a quite literal sense. To get second marks one sixteenth of an inch apart on a quadrant of 90 degrees, each degree having sixty minutes, in each of which are sixty seconds, would require a structure almost half again as high as the Empire State Building. Tycho couldn't get that.

But Tycho did build instruments of unexampled size. He used whole walls to lay out his quadrants; he used slits in the walls of a round tower for peepholes while he stood on the other side of the tower to get accuracy.

He got accuracy, more than any man before him had, but he didn't stop to theorize. He recorded his data, and sought more. It was Kepler who did the theorizing on Tycho's data, some years later. Copernicus had revived the orbital planet hypothesis about 1525 with such convincing arguments it was never again abandoned, but he again had circular orbits.

At first Kepler, too, assumed circular orbits, but so accurate were Tycho's observations, they ruled out both the circular orbit and very definitely the Ptolmaic theory as well. For the first time, Kepler abandoned the perfect curve, the circle, and tried and found the ellipse. At last they had a theory that greater accuracy merely strengthened.

Perhaps it is not fair to call Ptolmey's system a theory to explain so much as a highly ingenious and successful system of mathematical analysis to locate planets. From that viewpoint it is, was and always will be a triumph, because it was absolutely successful for over a millennium and a half. Greater accuracy made it, as a system of mathematics, useless.

Modern work depends on the telescope's power of magnification—not of objects but of lack of objects, the magnification of separation. The eye cannot separate two stars less than four and a half minutes of arc apart, while

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the telescope measures accurately a star's displacement of three fourths of a second caused by Earth's movement around the Sun—a quantity about one three-hundredth as great.

The work of time and accuracy of vision combine to make possible the detection of binary stars. It takes as much as five centuries for some binary stars to complete one circuit of their orbits, and the telescope is required to separate them visually. Without the telescope, we would see one star. With the telescope, over a period of time, we would see two independent stars that happened to be close together. Only time makes their slow orbital creep observable.

But the telescope has its limitations, of course, for, accurate as it is in the measurement of angles, once beyond the solar system the angles it is called upon to measure are too minute for even the greatest instrument's capabilities. The lower limit of error is approximately .005" of arc, and that limit of error means that stars more than 650 light years away cannot be located by direct measure of triangulation with an accuracy greater than one part in two. The error is equal to the quantity to be measured.

Then evidently, if we want to retain accuracy, we must keep away from slight angles; if all measurements contain at least that error, the bigger the angle measured, the smaller the percentage of error.

The distance to the Moon can be found by having one observatory on one side of the Earth and one on the antipodal point of the Earth, both focused on some selected spot on the Moon. We know the diameter of the Earth, and thus with three angles and a side of the triangle, we can readily determine the distance to the Moon.

Extremely accurate work on the Earth itself has determined its diameter

with precision about equal to the constancy of the planet—it is distorted by tides, planetary cross pulls, earthquakes, by the seasonal shifting of incalculable tons of snow and ice, etc.—to be 7,899,984 miles.

The distance to the Moon works out to be 238,854 miles. And because the angles are quite measurable, and the diameter of the Earth quite accurately determined we have a right to say the last figure is just about 4, and the figure certainly isn't as much as 238,875 miles.

But the next step is the Sun, and there we simply can't get a big angle. It's just about the same angle you have between your left eye and your right eye looking at a man a mile away. It is vanishingly small, anyway, and furthermore that optimum figure of only a few thousands of a second error doesn't apply because the conditions are not optimum.

The Sun is shining on the instruments—they don't use the big telescopes because it would ruin them to have the full heat of the sun strike them—and they are distorted. The air is heated unevenly, so that it acts to produce heat ripples, and the image of the Sun wavers badly, more so than the image of a star on a clear, cool night, and the distance we are trying to measure is some 11,000 times our base line.

We can't get a good determination, and we won't till we set up our observatory on the Moon, where there is no interfering atmosphere. We'll rough it in as about 92,897,000 miles, but know that our error is such that that last figure isn't any too good; it may be 887 or it may be 907, or 900, but it is about that.

But we can do this: We will assume that the distance is one unit; we will define it as one astronomical unit, and let the exact distance go for a bit. But since we defined it, whatever it is in miles as being one unit, we can go on

from there and assemble another few dozen of the scraps of the cosmic jigsaw puzzle of knowledge, isolated as yet, but ones we can connect in with other blocks later, when we know what that unit is in actual miles. For the time we can make progress along other lines.

We can use a new base line now: the diameter, not of the Earth, but of Earth's orbit, not 8,000 miles now, but 186,000,000 miles. Now to determine the distance to Mars. We can direct telescopes toward it in June, and again in December, when Earth has moved on hundreds of millions of miles. Mars has moved, too, but there are fairly easy ways to eliminate that in the equation.

The angle formed from the June position, the December position, and Mars gives us three angles of the triangle, and our orbit gives us a base line two units long. The base line is the same sort of size that the distance we are measuring is, so the angles are large and easy to measure accurately, much more accurately than we can measure the angle to the Sun.

The same sort of system applies for Jupiter, Saturn, Uranus, Neptune, and Pluto, all superior planets, planets beyond the Earth from the Sun.

For the inferior or inner planets, Venus and Mercury, a slightly different system is needed, but the general outline is the same.

Step One has been taken; we have laid out the solar system to-scale, with a pretty fair idea of its accurate size. The table now reads:

Planet	Distance From The Sun In Astronomical Units	Distance From The Sun In Approximate Miles
MERCURY	0.3871	35,960,000
VENUS	0.7233	67,200,000
EARTH	1.0000	92,897,000
MARS	1.5237	141,540,000
JUPITER	5.2028	483,310,000
SATURN	9.5388	886,100,000
URANUS	19.1910	1,782,700,000
NEPTUNE	30.0707	2,793,400,000
PLUTO	39.5967	3,680,000,000

Knowing now their distances from the Sun, and our own distance from the Sun, it is easy to calculate their distances from us at any given moment. With photographs which give the apparent diameter of the planet, knowing the magnification the telescope made, it is easy to calculate the actual diameter of the planet.

We get results fairly accurate for all save Pluto, so far and so small that it is very difficult to photograph, though the very fact that it is difficult gives us some data as to the planet's size. It certainly isn't large. The results on their diameters plus results from calculations on their gravitational influences on other planets, their own satellites if they have any, give us their masses, and finally their densities. They range:

Planet	Diameter (Miles)	Mass (Earth=1)	Density (Water=1)
MERCURY	3,009	0.04?	3.80?
VENUS	7,575	0.81?	5.09?
EARTH	7,919	1.000	5.52
MARS	4,216	0.108	3.95
JUPITER	86,728	316.940	1.33
SATURN	72,430	94.920	0.73
URANUS	30,878	14.582	1.36
NEPTUNE	32,932	16.93	1.30
PLUTO	5,???	???	4.??

It will be noticed that the diameter of Pluto, in fact all its properties, are questioned, for the photographs are so inaccurate. The masses, and hence the densities, of Mercury and Venus are questioned because, having no satellites, they cannot be "weighed" as accurately as the planets having satellites. Actually, the indicated data on Pluto is scientifically called an "estimate" and colloquially, "an educated guess."

The solar system is taking shape, but a surprising and intensely interesting shape! It is not one, but *two* systems!

This scientific discussion of the solar system will be continued next month.



Origin of Thought

by Spencer Lane

JERRY MOORE read the advertisement through once more and flung the paper down disgustedly. He hitched his hat lower over his eyes, fingered the last, lone nickel in his pocket, then slowly reached down for the paper.

The words "good salary" stuck out

and danced before his eyes like a barber pole on a spree. But he knew too much about the man whose name was printed at the end of the item. Jerry's hand moved once more, as if to fling the paper aside, but a twinge of hunger made him draw it back again.

Half the civilized world was up in arms about the statements made by Professor Hill. They called him a scientist gone mad, an opportunist scavenging a fortune from ignorant people; in fact, they called him everything that could be politely translated into print.

And it was true that, in growing numbers, men and women in the common walks of life were forming "Professor Hill" clubs. They were accepting his teaching as that of a new dispensation!

The professor's statements that *thought* had active power were outrageous. Yet through some unexplained chicanery he was convincing hordes of willing listeners. Worse, these followers swore to the truth of his claims. They themselves had been able, under his guidance, to make inanimate objects move by mere thought projection. The better-trained groups—advanced classes—were able to reproduce tones on a piano, ring bells, and perform other feats which were seemingly impossible.

Jerry Moore viewed the hysteria as a grand-stand stunt executed by a clever charlatan. Where Hill went, what he ate, the last detail of the clothes he wore each day, made the front pages of the Metropolitan dailies.

Every word the professor spoke in public was quoted, and the more complete the account of his activities, the better the sale of the paper which carried it!

His name crept into advertising. One cereal announced over Hill's endorsement, "A brain food—leaves a clear mind for mental endeavor." Cars, radios, linens, and furniture ads followed, with neatly turned phrases of commendation from the professor's lips.

It was disgusting—but Jerry was hungry!

He had tried for job after job. But experienced men tried, too. And Jerry's lifelong experience had been made up of spending the money his father had

left him. He and useful work had been strangers too long!

Professor Hill's advertisement seemed like a last resort, yet he hesitated. The final argument which made him note the address was his hunger. Jerry hadn't had a square meal in three days! His fingers pinched hard on that last, lone nickel in his pocket. It was either carfare, or—and he might not get the job!—a cup of coffee. After that there was the bread line at one of the charity places. Funny if it came to that. He'd given them money many times. At least he would feel his food was paid for.

It was getting toward noon when Jerry arrived at the professor's building. It was new, built as a school. Probably with some of the publicity money, Jerry thought, as he watched the throngs passing in and out. Professor Hill's name showed blatantly on their books.

He entered and approached the desk marked "Information."

"Did you wish to join one of the classes? The first door to the right for registration." The girl hadn't waited for him to speak.

"Sorry, beautiful, but I'm not a customer." Jerry grinned. At least the receptionist was interesting. But the look she gave him cooled his admiration several degrees.

"Then what *do* you want?" The note of sarcasm persuaded him that she wasn't really pretty.

"Sorry, miss. I came looking for the job you advertised."

"You'll have to wait, then," she told him, "the professor's class is in session. What's your name?"

"Jerry Moore, in person"—he bowed stiffly, his eyes dancing—"much in need of employment. If I get the job, maybe you'll go to lunch with me. I enjoy a meal—when I have one. You might like to see a really hungry man eat."

The girl turned her back.

TEN MINUTES LATER an office boy led him to the professor's office, a huge room with silvered walls and ceiling. A quick glance showed it to be severely simple in its furnishings. Just a mahogany desk, two cabinets, and a half dozen chairs.

The man was very cordial. He extended his hand as if to an old friend.

"Come in, come in and sit down, Mr. Moore. Miss Hartford has told me something about you. She didn't like you calling her beautiful."

Jerry could feel his neck and ears burning, but the professor only leaned back and laughed.

"Don't be too much upset, Mr. Moore," he continued, "I knew your father very well. Went to the same school with him. You're just a chip off the old block. The only difference is"—the man leaned forward and shook his finger in Jerry's face—"you spend money where he made it.

"I know your qualifications, so there's no need of an examination. There've been few applicants who could qualify at all. Perhaps you will hesitate, but I suppose you need money.

"I'll pay you a hundred dollars a week, and I'll get it back ten times over through the use of your name. I'll put you through a hard training to awaken your mind, then teach you to receive thought from a large group of people.

"I plan to try and transport you by thought waves!

"If it works, you may find yourself in some strange part of the world. Of course, I'll try then to bring you back again, but should I fail in that you'll have to look out for yourself wherever you may happen to be.

"Perhaps the experiment will fail; but if it works you'll have a reputation worth a fortune to you. Meantime, you will spend five hours a day at study—all your mind can absorb.

"That's the job. It will entail some danger. If you want to try it I can

advance money enough for you to enjoy yourself until the test comes. I'll advance, say, six months' salary. You might be away from civilization for a long time and unable to draw your salary. How about it?"

Jerry was slow to answer. He had considered this man a four-flusher—but how had he been so sure who Jerry was unless through mental suggestion? The professor had painted a fascinating picture. Jerry could almost see himself in some far corner of the world, lost, alone.

He'd traveled, was familiar with many foreign ports, but—this was different. Professor Hill was awaiting his answer, silently.

Jerry's appetite forced the answer, finally. He was hungry. And what chance was there of being *thought* to some distant spot? Yes, he wanted the job.

With two hundred dollars in his pocket, and more available when he needed it, the world felt better. He was free to enjoy himself until the following afternoon when he was to have his first lesson. Jerry stopped at the information desk as he went through the hall.

"Thanks to you, beautiful," he said, "I got the job. Hence we can eat. Will you keep that luncheon date with me? It'll be very enlightening to watch a man who hasn't had a meal in three days. It will be great for mental development."

THE COURSE was all the professor had promised. Jerry finished each lesson with a headache; and the mere thought of them would give him a headache when he wasn't studying! He was learning to control his brain, to make it do odd stunts that hooked the subconscious to the conscious control.

He learned, gradually, to let outside thoughts take affect on him; only the professor's at first, then a slowly increasing number of the most advanced

students in school. His brain seemed to be ripped apart at times, and hurled like a football. There was never a lesson—after the first five—ended without his sweating under a terrific and terrible strain.

Fear that the experiment might work began to bother him, but he wouldn't quit. He'd used too much of the professor's money to give up now. He'd permitted his name to be used extensively for publicity.

Newsmen followed him everywhere, and he liked it. His picture was in every paper, building up the "great mental experiment."

His money had made him known once; and the professor let it be taken for granted that he was *giving* his time now. Every step of the plan was made public. The press was to be allowed to witness the test in full force.

Jerry was coming to like the professor, and to hope in a half-hearted way, for the plan to succeed. As his contribution he tried hard to learn and to understand what was required of him. Lunch with Helen Hartford became not only an accomplished fact, but an everyday affair; and there were shows to be seen during the evenings.

Weeks passed. Each Professor Hill club had been given detailed instruction as to the great attempt. All would join in the mental effort necessary to accomplishment. Thousands of people were being drilled to think the same thoughts at precisely the same time.

And at last—the day.

Jerry found that he had lost his appetite. He thought constantly of what lay ahead. In the bustle of preparation that went on in the assembly room—he was urged to rest! He saw the last great pane of glass fitted into the partition which was to divide the newsmen and noise from himself and the chosen hundred who were to occupy the other end of the room. He saw the bedlike

platform on which he was to lie moved into place.

His nervousness increased until his brain was racing feverishly as he watched the students file slowly into their seats and sit thoughtfully, waiting. He was conscious of walking slowly to the platform, of seeing the newsmen gathering on the opposite side of the partition.

He had been trained to the utmost degree of sensitivity to the action of combined thought. His head ached from the condensed learning it had absorbed in the short period of three weeks. But he was ready. He could think prescribed thoughts without effort, blanking out all other impressions, until he could live like an automaton in a dream world.

As the clock slowly approached the zero hour, news cameras began to grind, recording every action through the glass screen. They pictured the hasty, blushing kiss planted on Jerry's lips by Helen as she turned away; the professor clasping Jerry's hand in farewell.

Everything was ready. All noise stopped. There didn't seem to be a sound within miles as Jerry lay back and closed his eyes to concentrate on reception of thought. The clicking of the news cameras could not be heard through the partition. The clock reached the hour. A faint gong sounded the time.

The papers came out with glaring headlines:

PROFESSOR HILL'S EXPERIMENT A SUCCESS

Jerry Moore had disappeared into thin air after forty-five minutes of concentration by the followers of Professor Abelard Hill! The newsreels pictured him until the moment when the platform was suddenly empty.

But the professor himself was not to

be seen! The outside world did not know it, but he was worried. He confided in Helen after several hours of tortured effort.

"I didn't try to place him in any set part of the world," he told her. "We forgot everything except moving him from this place to some distant spot. We thought only of distance. It was a terrible blunder. It will be very difficult for the groups to concentrate when he is not here. I don't know how to undo the mistake. Perhaps you, knowing the situation as well as I, can help me find a solution. There must be some way."

This was a shock. Helen pictured the possibilities. Suppose he had reappeared in mid-ocean!

JERRY opened his eyes. It seemed as if he had traveled a great distance. He felt tired and hungry. His bones ached as if they had been bruised.

His surroundings were strange. A gray mist clouded everything. He could see only a few feet in any direction. What part of the world could he be in? It was as gloomy as a London fog on a dark night. He got to his feet, but stumbled when he tried to walk.

The ground was uneven. It seemed to sink under his feet, like sponge rubber. It was an effort to walk at all, and he soon sat down. The ground wasn't damp. He wasn't on a swamp. But what else would sink that way?

He was hungry. He knew from the feeling that hours had passed while he lay unconscious. Thoughts seemed to run in series through his brain, without rhyme or reason. It interested him. He tried to form a picture from them, but nothing came clear.

There was a peculiar feeling in his head, as if his brain had suddenly come to life. It was uncanny. He began to fear the experiment had left a peculiar twist there. Perhaps he was insane. How could he tell? Maybe the sur-

roundings were natural. It might be *he* that was different. He pinched himself, as if that would tell the state of his mind. Was it imagination, or did the bruised flesh fail to hurt the way it should?

There was no feeling of discomfort in the foggy surroundings. The temperature was normal for a man to live in. In fact, it was hard to tell what the atmosphere was. It seemed part of the scheme of things. The surroundings seemed out of place, yet strangely natural.

He felt a vague uneasiness about everything. As if he should worry about something, but couldn't place it. What was there to worry about? Was some one lost? It seemed so, but how would he know? Why should it affect him?

He got up again. There must be some object he could recognize. If only there were a tree or bush near, he wouldn't feel so alone. But they didn't belong here. He felt it. They would be in an alien environment.

Conflicting thoughts made his head swim. Why was everything wrong? There must be some place within walking distance, which would straighten them out. He forged steadily ahead, but there was no change. The ground remained slightly uneven and gave at each step, his feet sinking several inches. It almost seemed as if it hurt him when he stepped on the surface, as if—he laughed a short, frightened laugh—as if he were walking on the convolutions of his own brain! Certainly the experience of the last few hours had unbalanced his mind.

After an hour's wandering, without change in the ground, hope began to fade. It took effort to move at all, and his strength was failing. When he stumbled and fell he lay racked by despair for a long time, then dropped into deep slumber.

Hours later, or even days, it was impossible to tell, he opened his eyes.

Everything was still the same: soft ground covered with heavy mist. A gray ghost of light seemed spread through the fog, but not enough to see more than a few feet. Perhaps he had slept through the period of daylight. The hopeless feeling began to creep over him again.

He was ravenously hungry now. Food was important. But where could he find anything to eat in the ghost land? There certainly were no people living under such conditions. Possibly some kind of life might exist. Perhaps there was dangerous life, hidden by the curtain of mist. He could be attacked before he knew anything was near.

STRANGELY, he felt close to places he'd always known, yet a great distance away. It seemed as if he might reach out and touch familiar objects. Helen seemed to hang in the background, at times closer than others. The professor was close as well, and Jerry turned his head, half expecting to see him.

He got to his feet again, to lurch forward, staggering at every step. It was doubly hard to keep a footing now. He laughed. He was paid for his time, but what a way to earn money! Food—when he found some he'd put any one to shame who had ever eaten a meal.

When every ounce of strength was exhausted he sank to the ground. What was the use? He'd landed somewhere, and there was no returning. He was in a land of nightmare.

On the verge of delirium an insane idea obsessed him. If he couldn't *have* food and drink, at least he could *imagine* how a good meal would look and taste. It struck his fancy, and he slowly built up a mental picture of the best meal he could remember, even to a glass and water bottle.

His mind ran on, the picture was built to the finest detail, tablecloth, napkin, silverware, and every dish filled

with steaming food. The water jug was the most inviting, he reached out a hand and touched it. He could feel it. The water poured into the glass with a tinkle. He raised it to his lips and drank. It wet his parched throat. And Jerry, sure that he was mad, continued his act.

Slowly the meal was consumed, from soup to dessert. The roast chicken was delicious. Almost, he was ashamed of the way he ate. Before he had swallowed the last mouthful he had drunk six glasses of water. Then coffee ended the perfect meal. A cigarette followed and he blew out a cloud of smoke.

The picture faded as he no longer held his mind on the food. The mist began to seep into his consciousness again. Instead of cigarette smoke he saw fog before his face. It was the breaking up of a perfect dream. His eyes were wide open now. Nothing had changed.

He sat up in wonder. He was no longer hungry! The craving was entirely gone. There was no thirst. His mouth was moist, as if he'd just taken a fresh drink! If a dream could do that?

He wondered if he was fully awake? Was he crazy? There was something wrong. He lay down hungry and thirsty, to *think* about a meal. Now he felt as though he'd eaten. It was impossible! Yet there remained no desire for food. If he was crazy, it was more comfortable than being hungry. He never wanted to be sane again. At least, not in this part of the world.

The ground was soft, but a bed would feel nicer. He tried another experiment. A hotel room where he'd spent many nights came slowly into mind. It was quite a job to bring every detail into the main thought, so he stopped trying and just thought of the bed. That was much easier, and he could almost feel the soft comfort of clean sheets.

It was difficult to hold the picture

steady. Every time he dozed off it started to disappear. He would have to wake up and rebuild the picture; but each time it required less effort. Finally he dropped into sound slumber, the bed forgotten.

PROFESSOR HILL changed his teachings, imperceptibly. Certain trends of thought were eliminated. There was no longer any effort to transfer objects. All effort was spent in expansion of the mind within the fields of ordinary endeavor. The courses were proving of greater value than during the time of more radical work.

He seemed to have lost all interest in publicity. The reporters had hard work to get even a small statement about the disappearance of Jerry Moore. They were baffled at the sudden change of attitude, but the result was a lot of theorizing, on their part, which covered more space than a statement would have gained.

The professor was worried. What happened to Jerry? Was he still alive? He was afraid; afraid of the power he'd unwittingly released. It was uncontrolled. It was *beyond* control! Once put in motion, there was no turning back. He, like the man who discovered fire, had played with an unknown power.

The classes continued studying the use of the brain, and the power of thought. But teaching was restricted. They could go so far and no farther. Danger of passing beyond the natural boundary of sanity was stressed. The value of the study was proved by the speed with which a person could learn, and retain knowledge after a short course. The courses became standard for preparatory schools. The royalty income was great from textbook sale alone.

Publicity and sensationalism were no longer necessary to obtain money for the work. It was more than self-supporting. Every cent of profit was

vided. Half the total was set aside, in trust for Jerry. If he returned to civilization there would be a small fortune waiting for him. It was all the professor could do to right his terrible mistake.

JERRY AWOKE. The mist was still about him as heavy and thick as ever. He was hungry again, and slowly the memory of the last meal returned. He would try it again.

Suddenly the comfort of the bed impinged upon his mind. The bed was real! He was lying on it! The same bed that had stood in the hotel room was here in this alien land. His head began to swim. There could be no mistake, it was the same one in which he'd slept several nights in the midst of civilization. A small mark on the headboard was there. He'd seen it as he lay in this same bed, months before.

He was dizzy. What could it mean? Something was radically wrong. First he thought of a meal—and was no longer hungry. Now after thinking of the bed *it was here!* True enough it stood in the strange surroundings, the legs sunk several inches into the ground. But it existed! In that moment Jerry came close to losing his mind. He *knew* he was crazy. He was seeing things, having hallucinations of dreams that came true!

Lying back on the bed with a groan, his mind eased a little. So this was how it felt to be out of your mind? Even if everything was wrong, he could enjoy things as they were. He thought of his razor. A shave would feel mighty good. His whiskers were getting too long for comfort. He could picture his outfit back in the civilized world. Every detail stood out. The cabinet—where it hung on the wall, with the electric bulb lighting the mirror. Ah, it would be good to be able to use it.

He was hungry again, and slowly built another picture of a meal—this time a

little different than the last, but very complete. It was easier now. He seemed to have found the way to build thought pictures, until they could be almost felt.

The new meal was as enjoyable as the last, and as satisfying. There remained no feeling of hunger afterward. At least there was some compensation for his surroundings. It wasn't much work to get what he wanted—a thought and there it was.

He was restless and finally swung to his feet off the edge of the bed to move around, then hesitated. There was the shaving cabinet, standing at a slant side of him! He rubbed his eyes—it was still there! Even the electric bulb over the mirror was *lighted*, casting a radiance around it.

For many moments he didn't move. The implication was clear. Everything he saw in his mind *existed!* But there was no water, and the cabinet would have to stand higher before he could use it.

He tried another experiment. Soon the dresser from the hotel room stood beside him. A few moments later there was a washbowl side of the cabinet. When the faucet was turned, *water* flowed! Hot or cold. He closed his eyes again. When he opened them the basin and cabinet hung in space, at their proper levels. Several times he passed his hand beneath them, then completely around. There was nothing for support—yet they hung in position!

As Jerry was shaving, he decided a bath would feel good, and the bathtub popped into his mind. When he turned, after rubbing his face with a clean towel from inside the cabinet—the bathtub waited a few feet away.

This was too much; he burst out laughing. There was a peculiar note in his voice. He felt his mind slipping and hung on to it desperately. He must accept things as they were, must not question what took place. He would

have to control his thoughts. They might bring about conditions he didn't want.

HE WISHED he could see Helen Hartford. Her face seemed to hang in the background somehow unutterably desirable. She seemed unhappy, worried. Strange! He hadn't formed that view of her in his mind! Then he saw her slim beauty clearly, at the desk in the school hall. She looked up, startled; as if something was affecting her, something she dreaded, yet vaguely hoped for. He wished she were with him.

Then he jumped. She was standing a few feet away, white as a sheet, looking him straight in the face. She crumpled up in a heap as he ran clumsily toward her. Carrying her tenderly to the bed, he brought water from the bowl that hung in space, and bathed her face. His shaving mug was the only thing he could find to serve as a basin, but it would do.

When she opened her eyes, they were filled with wonder as well as fear. He crushed her to him impulsively. It was an effective way to keep her from looking around at the crazy pattern of things. If she saw what he was slowly becoming accustomed to, without being told first, it might crack her mind. It didn't seem possible she could wake up sane, in the crazy place. After her first gasp of surprise she clung to him.

Carefully, after a few minutes, Jerry let her lie back on the bed, and close her eyes. Then he began a halting explanation of conditions and events. It was impossible to explain, but he tried. It would lessen the shock when she looked around her.

Helen finally peered up at him with a peculiar expression in her eyes. When the surroundings began to focus, a shade of doubt fled across her face. She turned her head slowly and looked at the objects Jerry had been describing. There was fear in her eyes now—fear of the

unknown. She turned and buried her head in the pillow.

When, after a long time, she looked up again the sight of Jerry seemed reassuring. Resolutely she sat up and turned to sit on the edge of the bed beside him. It was a battle to accept the facts as they were, but she fought, and slowly the unbelief left her eyes to be replaced by curiosity and interest.

When she said she was hungry, Jerry ordered a meal—if it could be called ordering. He concentrated on dishes, food, and a table and chairs. When he pulled his mind back to the present—the meal stood before them.

Here was a meal he could enjoy with the realization he was eating, not just imagining. After some hesitation, Helen felt of the chairs, then sat down.

It was a strange meal, in a strange place. To Helen it was a nightmare, but she forced food down her throat. Jerry enjoyed every mouthful. It was a delight to have some one sitting across from him. The feeling of being alone in the universe was gone.

FROM HELEN he learned of the professor's fear and uncertainty. He dreaded the words—but the sound of a human voice made up for a great deal. His brain sought for a solution as she talked.

"Helen," he asked finally, "try to concentrate on bringing some object here to you from your desk. I want to learn as much as I can, fast. Five minutes should serve."

The girl nodded, and both were silent—she concentrating, Jerry watching her. Fifteen minutes passed before she looked up. There were tears in her eyes.

"It's no use, Jerry. It's queer. You have gained power, dangerous power, but it is yours alone. You brought me over. You can send me back, perhaps. But the power is yours, not mine."

Jerry was startled. This was a new, unsettling idea. Perhaps he had stum-

bled on some terrific force which could accomplish what another person could not. He pulled his mind out of a tail-spin as he realized that the girl was speaking again.

"Why don't you experiment by sending these things back?" She waved her hand at the heterogeneous furnishings of empty space. "You had been gone over a week before you drew me across, Jerry. Time is out of joint here. I may have been here a day—or three days."

Jerry was silent for a while. He thought back over the sequence of events. Was it possible he held locked in some secret corner of his brain the power to get them back to Earth? He didn't know, but her suggestion as to the bed sounded reasonable.

She had told him that the bed actually disappeared from the hotel, and had created a near panic by its mysterious disappearance. If he could return it there was hope.

"I'm going to try," he said slowly, "and if we make it, I think I'll have to marry you, beautiful."

SLOWLY the Earthly furniture disappeared in the gray fog. One at a time Jerry concentrated on the objects around them, until the two people stood alone in the whirling mists. Their feet and ankles were sunk into the surface several inches, as they clasped hands. It was hard to take the last step. Jerry could get her back to Earth, but how about himself? It might mean separation forever. His power might not be sufficiently ego centric to force his own transference through the thought waves.

"As soon as you get back, Helen, ask the professor to have every one in the school concentrate on my return. It might make the difference between success and failure. I'm going to send you back now, confident that you'll get there—and hope that you go through all

right. Maybe I'll see you again—good-by.”

He turned away and after a moment's concentration turned back—she was no longer with him! An ache in his throat seemed to block his breathing. Then he caught hold of himself and thought of moving, of reappearing where he had been in the classroom.

A long time seemed to pass. He felt a sensation of dizziness, of falling. Then faintness overcame him for an instant. When it passed he opened his eyes.

He was lying on the platform, in the assembly room. Faces peered at him as if he were a ghost. Professor Hill was wiping the perspiration from his forehead nervously. Slowly Jerry got to his feet; and the students fled like scared rabbits. He laughed as he watched them go. “All paying customers at that, professor. You better go after them.” Jerry was himself again.

“Don't joke, Jerry! Don't! Thank Heaven you're alive. Helen has been here two days! She told me enough so I know that you reached the origin of thought! You could have destroyed the Earth, could have created new galaxies! You showed marvelous self-control. Had you raved—your anger would have brought horrible catastrophe to Earth —” His voice grew hoarse.

“Jerry, promise you won't say a word about what happened! Let me give some explanation. They wouldn't believe you anyway, and it's best that no one knows what happened. I went too

far, but it'll never happen again. I've changed all the courses. I'll never again teach advanced thinking. What you learned must be forgotten, for the good of humanity. The furniture reappeared as strangely as it vanished. The police are half crazy trying to solve the riddle, but they'll forget.

“You and Helen and I are the only ones who know, and we must never hint.”

“Oh, all right, professor—where is Helen now?”

A noise made him turn, and she was there. “Helen! You have forgotten, haven't you?”

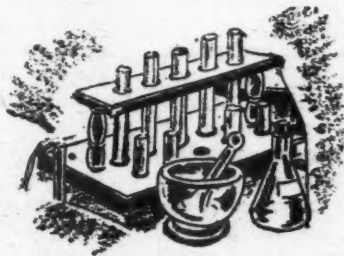
“No, Jerry, I haven't.”

Jerry found he had quite a little money. He didn't want to use it, but fortunately Helen persuaded him to take it as a precaution in case things went wrong.

The income from the school faded fast as the tales of the astounded crowd of students went the rounds. The papers turned their most vicious barbs on *Abelard Hill* as the faker who perpetrated the greatest hoax of all time on the public.

They saw the storm coming—the three who knew—and smiled grimly. Jerry suggested the mountains for at least a year, and added. “How about it, beautiful, are you going to marry the great experiment?”

Helen nodded and smiled, “Of course! Do you think I want to miss the trip to the mountains?”



THE SHADOW

*A brilliant science-fiction word
picture—complete in this issue*

by H. P. LOVECRAFT

AFTER twenty-two years of nightmare and terror, saved only by a desperate conviction of the mythical source of certain impressions, I am unwilling to vouch for the truth of that which I think I found in Western Australia on the night of July 17-18, 1935. There is reason to hope that my experience was wholly or partly an hallucination—for which, indeed, abundant causes existed. And yet, its realism was so hideous that I sometimes find hope impossible.

If the thing did happen, then man must be prepared to accept notions of the cosmos, and of his own place in the seething vortex of time, whose merest mention is paralyzing. He must, too, be placed on guard against a specific, lurking peril which, though it will never engulf the whole race, may impose monstrous and unguessable horrors upon certain venturesome members of it.

It is for this latter reason that I urge, with all the force of my being, a final abandonment of all the attempts at unearthing those fragments of unknown, primordial masonry which my expedition set out to investigate.

Assuming that I was sane and awake, my experience on that night was such as has befallen no man before. It was, moreover, a frightful confirmation of all I had sought to dismiss as myth and dream. Mercifully there is no proof, for in my fright I lost the awesome object which would—if real and brought out of that noxious abyss—have formed irrefutable evidence.

When I came upon the horror I was alone—and I have up to now told no one about it. I could not stop the others from digging in its direction, but chance and the shifting sand have so far saved them from finding it. Now I must formulate some definitive statement—not only for the sake of my own mental balance, but to warn such others as may read it seriously.

These pages—much in whose earlier parts will be familiar to close readers of the general and scientific press—are written in the cabin of the ship that is bringing me home. I shall give them to my son, Professor Wingate Peaslee of Miskatonic University—the only member of my family who stuck to me after my queer amnesia of long ago, and the man best informed on the inner facts of my case. Of all living persons, he is least likely to ridicule what I shall tell of that fateful night.

I did not enlighten him orally before sailing, because I think he had better have the revelation in written form. Reading and rereading at leisure will leave with him a more convincing picture than my confused tongue could hope to convey.

He can do anything that he thinks best with this account—showing it, with suitable comment, in any quarters where it will be likely to accomplish good. It is for the sake of such readers as are unfamiliar with the earlier phases of my case that I am prefacing the revelation itself with a fairly ample summary of its background.

OUT OF TIME



They spoke by the clicking or scraping of huge paws!

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MY NAME is Nathaniel Wingate Peaslee, and those who recall the newspaper tales of a generation back—or the letters and articles in psychological journals six or seven years ago—will know who and what I am. The press was filled with the details of my strange amnesia in 1908-13, and much was made of the traditions of horror, madness, and witchcraft which lurked behind the ancient Massachusetts town then and now forming my place of residence. Yet I would have it known that there is nothing whatever of the mad or sinister in my heredity and early life. This is a highly important fact in view of the shadow which fell so suddenly upon me from *outside* sources.

It may be that centuries of dark brooding had given to crumbling, whisper-haunted Arkham a peculiar vulnerability as regards such shadows—though even this seems doubtful in the light of those other cases which I later came to study. But the chief point is that my own ancestry and background are altogether normal. What came, came from *somewhere else*—where, I even now hesitate to assert in plain words.

I am the son of Jonathan and Hannah (Wingate) Peaslee, both of wholesome old Haverhill stock. I was born and reared in Haverhill—at the old homestead in Boardman Street near Golden Hill—and did not go to Arkham till I entered Miskatonic University as instructor of political economy in 1895.

For thirteen years more my life ran smoothly and happily. I married Alice Keezar of Haverhill in 1896, and my three children, Robert, Wingate and Hannah were born in 1898, 1900, and 1903, respectively. In 1898 I became an associate professor, and in 1902 a full professor. At no time had I the least interest in either occultism or abnormal psychology.

It was on Thursday, May 14, 1908, that the queer amnesia came. The thing was quite sudden, though later I real-

ized that certain brief, glimmering visions of several hours previous—chaotic visions which disturbed me greatly because they were so unprecedented—must have formed premonitory symptoms. My head was aching, and I had a singular feeling—altogether new to me—that some one else was trying to get possession of my thoughts.

The collapse occurred about 10:20 a. m., while I was conducting a class in Political Economy VI—history and present tendencies of economics—for juniors and a few sophomores. I began to see strange shapes before my eyes, and to feel that I was in a grotesque room other than the classroom.

My thoughts and speech wandered from my subject, and the students saw that something was gravely amiss. Then I slumped down, unconscious, in my chair, in a stupor from which no one could arouse me. Nor did my rightful faculties again look out upon the daylight of our normal world for five years, four months, and thirteen days.

It is, of course, from others that I have learned what followed. I showed no sign of consciousness for sixteen and a half hours, though removed to my home at 27 Crane Street, and given the best of medical attention.

At 3 a. m. May 15th my eyes opened and I began to speak, but before long the doctors and my family were thoroughly frightened by the trend of my expression and language. It was clear that I had no remembrance of my identity and my past, though for some reason I seemed anxious to conceal this lack of knowledge. My eyes gazed strangely at the persons around me, and the flexions of my facial muscles were altogether unfamiliar.

EVEN my speech seemed awkward and foreign. I used my vocal organs clumsily and gropingly, and my diction had a curiously stilted quality, as if I had laboriously learned the English lan-

guage from books. The pronunciation was barbarously alien, whilst the idiom seemed to include both scraps of curious Archaism and expressions of a wholly incomprehensible cast.

Of the latter, one in particular was very potently—even terrifiedly—recalled by the youngest of the physicians twenty years afterward. For at that late period such a phrase began to have an actual currency—first in England and then in the United States—and though of much complexity and indisputable newness, it reproduced in every least particular the mystifying words of the strange Arkham patient of 1908.

Physical strength returned at once, although I required an odd amount of re-education in the use of my hands, legs, and bodily apparatus in general. Because of this and other handicaps inherent in the mnemonic lapse, I was for some time kept under strict medical care.

When I saw that my attempts to conceal the lapse had failed, I admitted it openly, and became eager for information of all sorts. Indeed, it seemed to the doctors that I lost interest in my proper personality as soon as I found the case of amnesia accepted as a natural thing.

They noticed that my chief efforts were to master certain points in history, science, art, language, and folklore—some of them tremendously abstruse, and some childishly simple—which remained, very oddly in many cases, outside my consciousness.

At the same time they noticed that I had an inexplicable command of many almost unknown sorts of knowledge—a command which I seemed to wish to hide rather than display. I would inadvertently refer, with casual assurance, to specific events in dim ages outside the range of accepted history—passing off such references as a jest when I saw the surprise they created. And I had a

way of speaking of the future which two or three times caused actual fright.

These uncanny flashes soon ceased to appear, though some observers laid their vanishment more to a certain furtive caution on my part than to any waning of the strange knowledge behind them. Indeed, I seemed anomalously avid to absorb the speech, customs, and perspectives of the age around me; as if I were a studious traveler from a far, foreign land.

As soon as permitted, I haunted the college library at all hours; and shortly began to arrange for those odd travels, and special courses at American and European Universities, which evoked so much comment during the next few years.

I did not at any time suffer from a lack of learned contacts, for my case had a mild celebrity among the psychologists of the period. I was lectured upon as a typical example of secondary personality—even though I seemed to puzzle the lecturers now and then with some bizarre symptom or some queer trace of carefully veiled mockery.

Of real friendliness, however, I encountered little. Something in my aspect and speech seemed to excite vague fears and aversions in every one I met, as if I were a being infinitely removed from all that is normal and healthful. This idea of a black, hidden horror connected with incalculable gulfs of some sort of distance was oddly widespread and persistent.

My own family formed no exception. From the moment of my strange waking my wife had regarded me with extreme horror and loathing, vowing that I was some utter alien usurping the body of her husband. In 1910 she obtained a legal divorce, nor would she ever consent to see me, even after my return to normality in 1913. These feelings were shared by my elder son and my small daughter, neither of whom I have ever seen since.

ONLY my second son, Wingate, seemed able to conquer the terror and repulsion which my change aroused. He indeed felt that I was a stranger, but though only eight years old held fast to a faith that my proper self would return. When it did return he sought me out, and the courts gave me his custody. In succeeding years he helped me with the studies to which I was driven, and to-day, at thirty-five, he is a professor of psychology at Miskatonic.

But I do not wonder at the horror I caused—for certainly, the mind, voice, and facial expression of the being that awaked on May 15, 1908, were not those of Nathaniel Wingate Peaslee.

I will not attempt to tell much of my life from 1908 to 1913, since readers may glean all the outward essentials—as I largely had to do—from files of old newspapers and scientific journals.

I was given charge of my funds, and spent them slowly and on the whole wisely, in travel and in study at various centers of learning. My travels, however, were singular in the extreme, involving long visits to remote and desolate places.

In 1909 I spent a month in the Himalayas, and in 1911 aroused much attention through a camel trip into the unknown deserts of Arabia. What happened on those journeys I have never been able to learn.

During the summer of 1912 I chartered a ship and sailed in the arctic, north of Spitzbergen, afterward showing signs of disappointment.

Later in that year I spent weeks alone beyond the limits of previous or subsequent exploration in the vast limestone caverns system of western Virginia—black labyrinths so complex that no retracing of my steps could even be considered.

My sojourns at the universities were marked by abnormally rapid assimilation, as if the secondary personality had an intelligence enormously superior to

my own. I have found, also, that my rate of reading and solitary study was phenomenal. I could master every detail of a book merely by glancing over it as fast as I could turn the leaves; while my skill at interpreting complex figures in an instant was veritably awesome.

At times there appeared almost ugly reports of my power to influence the thoughts and acts of others, though I seemed to have taken care to minimize displays of this faculty.

Other ugly reports concerned my intimacy with leaders of occultist groups, and scholars suspected of connection with nameless bands of abhorrent elder-world hierophants. These rumors, though never proved at the time, were doubtless stimulated by the known tenor of some of my reading—for the consultation of rare books at libraries cannot be effected secretly.

There is tangible proof—in the form of marginal notes—that I went minutely through such things as the Comte d'Erlette's *Cultes des Goules*, Ludvig Prinn's *De Vermis Mysteriis*, the *Unaussprechlichen Kulten* of von Junzt, the surviving fragments of the puzzling *Book of Eibon*, and the dreaded *Necronomicon* of the mad Arab Abdul Alhazred. Then, too, it is undeniable that a fresh and evil wave of underground cult activity set in about the time of my odd mutation.

IN THE SUMMER of 1913 I began to display signs of ennui and flagging interest, and to hint to various associates that a change might soon be expected in me. I spoke of returning memories of my earlier life—though most auditors judged me insincere, since all the recollections I gave were casual, and such as might have been learned from my old private papers.

About the middle of August I returned to Arkham and reopened my long-closed house in Crane Street. Here I installed a mechanism of the most

curious aspect, constructed piecemeal by different makers of scientific apparatus in Europe and America, and guarded carefully from the sight of any one intelligent enough to analyze it.

Those who did see it—a workman, a servant, and the new housekeeper—say that it was a queer mixture of rods, wheels, and mirrors, though only about two feet tall, one foot wide, and one foot thick. The central mirror was circular and convex. All this is borne out by such makers of parts as can be located.

On the evening of Friday, September 26, I dismissed the housekeeper and the maid until noon of the next day. Lights burned in the house till late, and a lean, dark, curiously foreign-looking man called in an automobile.

It was about one a. m. that the lights were last seen. At 2:15 a. m. a policeman observed the place in darkness, but with the stranger's motor still at the curb. By 4 o'clock the motor was certainly gone.

It was at 6 o'clock that a hesitant, foreign voice on the telephone asked Dr. Wilson to call at my house and bring me out of a peculiar faint. This call—a long-distance one—was later traced to a public booth in the North Station in Boston, but no sign of the lean foreigner was ever unearthed.

When the doctor reached my house he found me unconscious in the sitting room—in an easy-chair with a table drawn up before it. On the polished table top were scratches showing where some heavy object had rested. The queer machine was gone, nor was anything afterward heard of it. Undoubtedly the dark, lean foreigner had taken it away.

In the library grate were abundant ashes, evidently left from the burning of every remaining scrap of paper on which I had written since the advent of the amnesia. Dr. Wilson found my breathing very peculiar, but after an

hypodermic injection it became more regular.

At 11:15 a. m., September 27th, I stirred vigorously, and my hitherto masklike face began to show signs of expression. Dr. Wilson remarked that the expression was not that of my secondary personality, but seemed much like that of my normal self. About 11:30 I muttered some very curious syllables—syllables which seemed unrelated to any human speech. I appeared, too, to struggle against something. Then, just after noon—the housekeeper and the maid having meanwhile returned—I began to mutter in English:

“—of the orthodox economists of that period, Jevons typifies the prevailing trend toward scientific correlation. His attempt to link the commercial cycle of prosperity and depression with the physical cycle of the solar spots forms perhaps the apex of—”

Nathaniel Wingate Peaslee had come back—a spirit in whose time scale it was still that Thursday morning in 1908, with the economics class gazing up at the battered desk on the platform.

II.

MY REABSORPTION into normal life was a painful and difficult process. The loss of over five years creates more complications than can be imagined, and in my case there were countless matters to be adjusted.

What I heard of my actions since 1908 astonished and disturbed me, but I tried to view the matter as philosophically as I could. At last, regaining custody of my second son, Wingate, I settled down with him in the Crane Street house and endeavored to resume my teaching—my old professorship having been kindly offered me by the college.

I began work with the February 1914 term, and kept at it just a year. By that time I realized how badly my experience had shaken me. Though per-

factly sane—I hoped—and with no flaw in my original personality, I had not the nervous energy of the old days. Vague dreams and queer ideas continually haunted me, and when the outbreak of the World War turned my mind to history I found myself thinking of periods and events in the oddest possible fashion.

My conception of *time*—my ability to distinguish between consecutiveness and simultaneousness—seemed subtly disordered; so that I formed chimerical notions about living in one age and casting one's mind all over eternity for knowledge of past and future ages.

The War gave me strange impressions of remembering some of its far-off consequences—as if I knew how it was coming out and could look *back* upon it in the light of future information. All such quasi memories were attended with much pain, and with a feeling that some artificial psychological barrier was set against them.

When I diffidently hinted to others about my impressions, I met with varied responses. Some persons looked uncomfortably at me, but men in the mathematics department spoke of new developments in those theories of relativity—then discussed only in learned circles—which were later to become so famous. Dr. Albert Einstein, they said, was rapidly reducing time to the status of a mere dimension.

But the dreams and disturbed feelings gained on me, so that I had to drop my regular work in 1915. Certain of the impressions were taking an annoying shape—giving me the persistent notion that my amnesia had formed some unholy sort of exchange; that the secondary personality had indeed been an intruding force from unknown regions, and that my own personality had suffered displacement.

Thus I was driven to vague and frightful speculations concerning the whereabouts of my true self during the

years that another had held my body. The curious knowledge and strange conduct of my body's late tenant troubled me more and more as I learned further details from persons, papers, and magazines.

Queernesses that had baffled others seemed to harmonize terribly with some background of black knowledge which festered in the chasms of my subconsciousness. I began to search feverishly for every scrap of information bearing on the studies and travels of that other one during the dark years.

Not all of my troubles were as semi-abstract as this. There were the dreams—and these seemed to grow in vividness and concreteness. Knowing how most would regard them, I seldom mentioned them to any one but my son or certain trusted psychologists, but eventually I commenced a scientific study of other cases in order to see how typical or nontypical such visions might be among amnesia victims.

My results, aided by psychologists, historians, anthropologists, and mental specialists of wide experience, and by a study that included all records of split personalities from the days of demoniac-possession legends to the medically realistic present, at first bothered me more than they consoled me.

I SOON FOUND that my dreams had, indeed, no counterpart in the overwhelming bulk of true amnesia cases. There remained, however, a tiny residue of accounts which for years baffled and shocked me with their parallelism to my own experience. Some of them were bits of ancient folklore; others were case histories in the annals of medicine; one or two were anecdotes obscurely buried in standard histories.

It thus appeared that, while my special kind of affliction was prodigiously rare, instances of it had occurred at long intervals ever since the beginning of men's annals. Some centuries might contain

one, two, or three cases, others none—or at least none whose record survived.

The essence was always the same—a person of keen thoughtfulness seized with a strange secondary life and leading for a greater or lesser period an utterly alien existence typified at first by vocal and bodily awkwardness, and later by a wholesale acquisition of scientific, historic, artistic, and anthropological knowledge; an acquisition carried on with feverish zest and with a wholly abnormal absorptive power. Then a sudden return of the rightful consciousness, intermittently plagued ever after with vague unplaceable dreams suggesting fragments of some hideous memory elaborately blotted out.

And the close resemblance of those nightmares to my own—even in some of the smallest particulars—left no doubt in my mind of their significantly typical nature. One or two of the cases had an added ring of faint, blasphemous familiarity, as if I had heard of them before through some cosmic channel too morbid and frightful to contemplate. In three instances there was specific mention of such an unknown machine as had been in my house before the second change.

Another thing that worried me during my investigation was the somewhat greater frequency of cases where a brief, elusive glimpse of the typical nightmares was afforded to persons not visited with well-defined amnesia.

These persons were largely of mediocre mind or less—some so primitive that they could scarcely be thought of as vehicles for abnormal scholarship and preternatural mental acquisitions. For a second they would be fired with alien force—then a backward lapse, and a thin, swift-fading memory of unhuman horrors.

There had been at least three such cases during the past half century—one only fifteen years before. Had something been groping blindly through time

from some unsuspected abyss in nature? Were these faint cases monstrous, sinister experiments of a kind and authority utterly beyond sane belief?

Such were a few of the formless speculations of my weaker hours—fancies abetted by myths which my studies uncovered. For I could not doubt but that certain persistent legends of immemorial antiquity, apparently unknown to the victims and physicians connected with recent amnesia cases, formed a striking and awesome elaboration of memory lapses such as mine.

OF THE NATURE of the dreams and impressions which were growing so clamorous I still almost fear to speak. They seemed to savor of madness, and at times I believed I was indeed going mad. Was there a special type of delusion afflicting those who had suffered lapses of memory? Conceivably, the efforts of the subconscious mind to fill up a perplexing blank with pseudomemories might give rise to strange imaginative vagaries.

This, indeed—though an alternative folklore theory finally seemed to me more plausible—was the belief of many of the alienists who helped me in my search for parallel cases, and who shared my puzzlement at the exact resemblances sometimes discovered.

They did not call the condition true insanity, but classed it rather among neurotic disorders. My course in trying to track it down and analyze it, instead of vainly seeking to dismiss or forget it, they heartily endorsed as correct according to the best psychological principles. I especially valued the advice of such physicians as had studied me during my possession by the other personality.

My first disturbances were not visual at all, but concerned the more abstract matters which I have mentioned. There was, too, a feeling of profound and inexplicable horror concerning myself. I

developed a queer fear of seeing my own form, as if my eyes would find it something utterly alien and inconceivably abhorrent.

When I did glance down and behold the familiar human shape in quiet gray or blue clothing, I always felt a curious relief, though in order to gain this relief I had to conquer an infinite dread. I shunned mirrors as much as possible, and was always shaved at the barber's.

It was a long time before I correlated any of these disappointed feelings with the fleeting visual impressions which began to develop. The first such correlation had to do with the odd sensation of an external, artificial restraint on my memory.

I felt that the snatches of sight I experienced had a profound and terrible meaning, and a frightful connection with myself, but that some purposeful influence held me from grasping that meaning and that connection. Then came that queerness about the element of time, and with it desperate efforts to place the fragmentary dream glimpses in the chronological and spatial pattern.

The glimpses themselves were at first merely strange rather than horrible. I would seem to be in an enormous vaulted chamber whose lofty stone groinings were well nigh lost in the shadows overhead. In whatever time or place the scene might be, the principle of the arch was known as fully and used as extensively as by the Romans.

There were colossal, round windows and high, arched doors, and pedestals or tables each as tall as the height of an ordinary room. Vast shelves of dark wood lined the walls, holding what seemed to be volumes of immense size with strange hieroglyphs on their backs.

The exposed stonework held curious carvings, always in curvilinear mathematical designs, and there were chiseled inscriptions in the same characters that the huge books bore. The dark granite masonry was of a monstrous megalithic

type, with lines of convex-topped blocks fitting the concave-bottomed courses which rested upon them.

There were no chairs, but the tops of the vast pedestals were littered with books, papers, and what seemed to be writing materials—oddly figured jars of a purplish metal, and rods with stained tips. Tall as the pedestals were, I seemed at times able to view them from above. On some of them were great globes of luminous crystal serving as lamps, and inexplicable machines formed of vitreous tubes and metal rods.

The windows were glazed, and latticed with stout-looking bars. Though I dared not approach and peer out them, I could see from where I was the waving tops of singular fernlike growths. The floor was of massive octagonal flagstones, while rugs and hangings were entirely lacking.

LATER, I had visions of sweeping through Cyclopean corridors of stone, and up and down gigantic, inclined planes of the same monstrous masonry. There were no stairs anywhere, nor was any passageway less than thirty feet wide. Some of the structures through which I floated must have towered in the sky for thousands of feet.

There were multiple levels of black vaults below, and never-opened trapdoors, sealed down with metal bands and holding dim suggestions of some special peril.

I seemed to be a prisoner, and horror hung broodingly over everything I saw. I felt that the mocking curvilinear hieroglyphs on the walls would blast my soul with their message were I not guarded by a merciful ignorance.

Still later my dreams included vistas from the great round windows, and from the titanic flat roof, with its curious gardens, wide barren area, and high, scalloped parapet of stone, to which the topmost of the inclined planes led.

There were almost endless leagues of giant buildings, each in its garden, and ranged along paved roads fully two hundred feet wide. They differed greatly in aspect, but few were less than five hundred feet square or a thousand feet high. Many seemed so limitless that they must have had a frontage of several thousand feet, while some shot up to mountainous altitudes in the gray, steamy heavens.

They seemed to be mainly of stone or concrete, and most of them embodied the oddly curvilinear type of masonry noticeable in the building that held me. Roofs were flat and garden-covered, and tended to have scalloped parapets. Sometimes there were terraces and higher levels, and wide, cleared spaces amidst the gardens. The great roads held hints of motion, but in the earlier visions I could not resolve this impression into details.

In certain places I beheld enormous dark cylindrical towers which climbed far above any of the other structures. These appeared to be of a totally unique nature and showed signs of prodigious age and dilapidation. They were built of a bizarre type of square-cut basalt masonry, and tapered slightly toward their rounded tops. Nowhere in any of them could the least traces of windows or other apertures save huge doors be found. I noticed also some lower buildings—all crumbling with the weathering of æons—which resembled these dark, cylindrical towers in basic architecture. Around all these aberrant piles of square-cut masonry there hovered an inexplicable aura of menace and concentrated fear, like that bred by the sealed trapdoors.

THE omnipresent gardens were almost terrifying in their strangeness, with bizarre and unfamiliar forms of vegetation nodding over broad paths lined with curiously carven monoliths. Abnormally vast fernlike growths pre-

dominated—some green, and some of a ghastly, fungoid pallor.

Among them rose great spectral things resembling Calamites, whose bamboo-like trunks towered to fabulous heights. Then there were tufted forms like fabulous cycads, and grotesque dark-green shrubs and trees of coniferous aspect.

Flowers were small, colorless, and unrecognizable, blooming in geometrical beds and at large among the greenery.

In a few of the terrace and roof-top gardens were larger and more-vivid blossoms of almost offensive contours and seeming to suggest artificial breeding. Fungi of inconceivable size, outlines, and colors speckled the scene in patterns bespeaking some unknown but well-established horticultural tradition. In the larger gardens on the ground there seemed to be some attempt to preserve the irregularities of nature, but on the roofs there was more selectiveness, and more evidences of the topiary art.

The skies were almost always moist and cloudy, and sometimes I would seem to witness tremendous rains. Once in a while, though, there would be glimpses of the Sun—which looked abnormally large—and of the Moon, whose markings held a touch of difference from the normal that I could never quite fathom. When—very rarely—the night sky was clear to any extent, I beheld constellations which were nearly beyond recognition. Known outlines were sometimes approximated, but seldom duplicated; and from the position of the few groups I could recognize, I felt I must be in the Earth's southern hemisphere, near the Tropic of Capricorn.

The far horizon was always steamy and indistinct, but I could see that great jungles of unknown tree ferns, Calamites, *Lepidodendron*, and *sigillaria* lay outside the city, their fantastic frontage waving mockingly in the shifting vapors. Now and then there would be sugges-

tions of motion in the sky, but these my early visions never resolved.

By the autumn of 1914 I began to have infrequent dreams of strange floatings over the city and through the regions around it. I saw interminable roads through forests of fearsome growths with mottled, fluted, and banded trunks, and past other cities as strange as the one which persistently haunted me.

I saw monstrous constructions of black or iridescent stone in glades and clearings where perpetual twilight reigned, and traversed long causeways over swamps so dark that I could tell but little of their moist, towering vegetation.

Once I saw an area of countless miles strewn with age-blasted basaltic ruins whose architecture had been like that of the few windowless, round-topped towers in the haunting city.

And once I saw the sea—a boundless, steamy expanse beyond the colossal stone piers of an enormous town of domes and arches. Great shapeless suggestions of shadow moved over it, and here and there its surface was vexed with anomalous spoutings.

III.

AS I HAVE SAID, it was not immediately that these wild visions began to hold their terrifying quality. Certainly, many persons have dreamed intrinsically stranger things—things compounded of unrelated scraps of daily life, pictures, and reading, and arranged in fantastically novel forms by the unchecked caprices of sleep.

For some time I accepted the visions as natural, even though I had never before been an extravagant dreamer. Many of the vague anomalies, I argued, must have come from trivial sources too numerous to track down; while others seemed to reflect a common textbook knowledge of the plants and other

conditions of the primitive world of a hundred and fifty million years ago—the world of the Permian or Triassic Age.

In the course of some months, however, the element of terror did figure with accumulating force. This was when the dreams began so unflinchingly to have the aspect of memories, and when my mind began to link them with my growing abstract disturbances—the feeling of mnemonic restraint, the curious impressions regarding time, the sense of a loathsome exchange with my secondary personality of 1908-13, and, considerably later, the inexplicable loathing of my own person.

As certain definite details began to enter the dreams, their horror increased a thousandfold—until by October, 1915, I felt I must do something. It was then that I began an intensive study of other cases of amnesia and visions, feeling that I might thereby objectivize my trouble and shake clear of its emotional grip.

However, as before mentioned, the result was at first almost exactly opposite. It disturbed me vastly to find that my dreams had been so closely duplicated; especially since some of the accounts were too early to admit of any geological knowledge—and therefore of any idea of primitive landscapes—on the subjects' part.

What is more, many of these accounts supplied very horrible details and explanations in connection with the visions of great buildings and jungle gardens—and other things. The actual sights and vague impressions were had enough, but what was hinted or asserted by some of the other dreamers savored of madness and blasphemy. Worst of all, my own pseudomemory was aroused to wilder dreams and hints of coming revelations. And yet most doctors deemed my course, on the whole, an advisable one.

I studied psychology systematically and under the prevailing stimulus my son Wingate did the same—his studies

leading eventually to his present professorship. In 1917 and 1918 I took special courses at Miskatonic. Meanwhile, my examination of medical, historical, and anthropological records became indefatigable, involving travels to distant libraries, and finally including even a reading of the hideous books of forbidden elder lore in which my secondary personality had been so disturbingly interested.

Some of the latter were the actual copies I had consulted in my altered state, and I was greatly disturbed by certain marginal notations and ostensible corrections of the hideous text in a script and idiom which somehow seemed oddly unhuman.

These markings were mostly in the respective languages of the various books, all of which the writer seemed to know with equal, though obviously, academic facility. One note appended to von Junzt's *Unaussprechlichen Kulten*, however, was alarmingly otherwise. It consisted of certain curvilinear hieroglyphs in the same ink as that of the German corrections, but following no recognized human pattern. And these hieroglyphs were closely and unmistakably akin to the characters constantly met with in my dreams—characters whose meaning I would sometimes momentarily fancy I knew, or was just on the brink of recalling.

To complete my black confusion, many librarians assured me that, in view of previous examinations and records of consultation of the volumes in question, all of these notations must have been made by myself in my secondary state. This despite the fact that I was and still am ignorant of three of the languages involved.

PIECING TOGETHER the scattered records, ancient and modern, anthropological and medical, I found a fairly consistent mixture of myth and hallucination whose scope and wildness

left me utterly dazed. Only one thing consoled me: the fact that the myths were of such early existence. What lost knowledge could have brought pictures of the Paleozoic or Mesozoic landscape into these primitive fables, I could not even guess; but the pictures had been there. Thus, a basis existed for the formation of a fixed type of delusion.

Cases of amnesia no doubt created the general myth pattern—but afterward the fanciful accretions of the myths must have reacted on amnesia sufferers and colored their pseudomemories. I myself had read and heard all the early tales during my memory lapse—my quest had amply proved that. Was it not natural, then, for my subsequent dreams and emotional impressions to become colored and molded by what my memory subtly held over from my secondary state?

A few of the myths had significant connections with other cloudy legends of the prehuman world, especially those Hindu tales involving stupefying gulfs of time and forming part of the lore of modern theosophists.

Primal myth and modern delusion joined in their assumption that mankind is only one—perhaps the least—of the highly evolved and dominant races of this planet's long and largely unknown career. Things of inconceivable shape, they implied, had reared great towers to the sky and delved into every secret of nature before the first amphibian forbear of man had crawled out of the hot sea three hundred million years ago.

Some had come down from the stars; a few were as old as the cosmos itself; others had risen swiftly from terrane germs $\epsilon\delta$ far behind the first germs of our life cycle as those germs are behind ourselves. Spans of thousands of millions of years, and linkages of other galaxies and universes, were freely spoken of. Indeed, there was no such

thing as time in its humanly accepted sense.

But most of the tales and impressions concerned a relatively late race, of a queer and intricate shape, resembling no life form known to science, which had lived till only fifty million years before the advent of man. This, they indicated, was the greatest race of all because it alone had conquered the secret of time.

It had learned all things that ever were known or ever would be known on the Earth, through the power of its keener minds to project themselves into the past and future, even through gulfs of millions of years, and study the lore of every age. From the accomplishments of this race arose all legends of prophets, including those in human mythology.

In its vast libraries were volumes of texts and pictures holding the whole of Earth's annals—histories and descriptions of every species that had ever been or that ever would be, with full records of their arts, their achievements, their languages, and their psychologies.

With this æon-embracing knowledge, the Great Race chose from every era and life form such thoughts, arts, and processes as might suit its own nature and situation. Knowledge of the past, secured through a kind of mind casting outside the recognized senses, was harder to glean than knowledge of the future.

In the latter case the course was easier and more material. With suitable mechanical aid a mind would project itself forward in time, feeling its dim, extra-sensory way till it approached the desired period. Then, after preliminary trials, it would seize on the best discoverable representative of the highest of that period's life forms. It would enter the organism's brain and set up therein its own vibrations, while the displaced mind would strike back to the period of the displacer, remaining in the

latter's body till a reverse process was set up.

The projected mind, in the body of the organism of the future, would then pose as a member of the race whose outward form it wore, learning as quickly as possible all that could be learned of the chosen age and its massed information and techniques.

MEANWHILE the displaced mind, thrown back to the displacer's age and body, would be carefully guarded. It would be kept from harming the body it occupied, and would be drained of all its knowledge by trained questioners. Often it could be questioned in its own language, when previous quests into the future had brought back records of that language.

If the mind came from a body whose language the Great Race could not physically reproduce, clever machines would be made, on which the alien speech could be played as on a musical instrument.

The Great Race's members were immense rugose cones ten feet high, and with head and other organs attached to foot-thick, distensible limbs spreading from the apexes. They spoke by the clicking or scraping of huge paws or claws attached to the end of two of their four limbs, and walked by the expansion and contraction of a viscous layer attached to their vast, ten-foot bases.

When the captive mind's amazement and resentment had worn off, and when—assuming that it came from a body vastly different from the Great Race's—it had lost its horror at its unfamiliar, temporary form, it was permitted to study its new environment and experience a wonder and wisdom approximating that of its displacer.

With suitable precautions, and in exchange for suitable services, it was allowed to rove all over the habitable world in titan airships or on the huge

boatlike, atomic-engined vehicles which traversed the great roads, and to delve freely into the libraries containing records of the planet's past and future.

This reconciled many captive minds to their lot; since none were other than keen, and to such minds the unveiling of hidden mysteries of Earth—closed chapters of inconceivable pasts and dizzying vortices of future time which include the years ahead of their own natural ages—forms always, despite the abysmal horrors often unveiled, the supreme experience of life.

Now and then certain captives were permitted to meet other captive minds seized from the future—to exchange thoughts with consciousness living a hundred or a thousand or a million years before or after their own ages. And all were urged to write copiously in their own languages of themselves and their respective periods, such documents to be filed in the great central archives.

It may be added that there was one special type of captive whose privileges were far greater than those of the majority. These were the dying *permanent* exiles, whose bodies in the future had been seized by keen-minded members of the Great Race who, faced with death, sought to escape mental extinction.

Such melancholy exiles were not as common as might be expected, since the longevity of the Great Race lessened its love of life—especially among those superior minds capable of projection. From cases of the permanent projection of elder minds arose many of those lasting changes of personality noticed in later history—including mankind's.

As for the ordinary cases of exploration—when the displacing mind had learned what it wished in the future, it would build an apparatus like that which had started its flight and reverse the process of projection. Once more it would be in its own body in its own age, while the lately captive mind would

return to that body of the future to which it properly belonged.

Only when one or the other of the bodies had died during the exchange was this restoration impossible. In such cases, of course, the exploring mind had—like those of the death escapers—to live out an alien-bodied life in the future; or else the captive mind—like the dying permanent exiles—had to end its days in the form and past age of the Great Race.

THIS FATE was least horrible when the captive mind was also of the Great Race—a not infrequent occurrence, since in all its periods that race was intensely concerned with its own future. The number of dying permanent exiles of the Great Race was very slight—largely because of the tremendous penalties attached to displacements of future Great Race minds by the moribund.

Through projection, arrangements were made to inflict these penalties on the offending minds in their new future bodies—and sometimes forced re-exchanges were effected.

Complex cases of the displacement of exploring or already captive minds by minds in various regions of the past had been known and carefully rectified. In every age since the discovery of mind projection, a minute but well-recognized element of the population consisted of Great Race minds from past ages, sojourning for a longer or shorter while.

When a captive mind of alien origin was returned to its own body in the future, it was purged by an intricate mechanical hypnosis of all it had learned in the Great Race Age—this because of certain troublesome consequences inherent in the general carrying forward of knowledge in large quantities.

The few existing instances of clear transmission had caused, and would cause at known future times, great disasters. And it was largely in conse-



*Of the animals I saw I could
write volumes!*

quence of two cases of the kind—said the old myths—that mankind had learned what it had concerning the Great Race.

Of all things surviving physically and directly from that æon-distant world, there remained only certain ruins of great stones in far places and under the sea, and parts of the text of the frightful Pnakotic Manuscripts.

Thus, the returning mind reached its own age with only the faintest and most fragmentary visions of what it had un-

dergone since its seizure. All memories that could be eradicated were eradicated, so that in most cases only a dream-shadowed blank stretched back to the time of the first exchange. Some minds recalled more than others, and the chance joining of memories had at rare times brought hints of the forbidden past to future ages.

There probably never was a time when groups or cults did not secretly cherish certain of these hints. In the *Necronomicon* the presence of such a cult among human beings was suggested—a cult that sometimes gave aid to minds voyaging down the æons from the days of the Great Race.



And, meanwhile, the Great Race itself waxed well-nigh omniscient, and turned to the task of setting up exchanges with the minds of other planets, and of exploring their pasts and futures. It sought likewise to fathom the past years and origin of that black, æon-dead orb in far space whence its own mental heritage had come—for the mind of the Great Race was older than its bodily form.

The beings of a dying elder world, wise with the ultimate secrets, had looked ahead for a new world and species wherein they might have long life, and had sent their minds *en masse* into that future race best adapted to

house them—the cone-shaped things that peopled our Earth a billion years ago.

Thus the Great Race came to be, while the myriad minds sent backward were left to die in the horror of strange shapes. Later the race would again face death, yet would live through another forward migration of its best minds into the bodies of others who had a longer physical span ahead of them.

SUCH was the background of intertwined legend and hallucination. When, around 1920, I had my researches in coherent shape, I felt a slight lessening of the tension which their earlier stages

had increased. After all, and in spite of the fancies prompted by blind emotions, were not most of my phenomena readily explainable? Any chance might have turned my mind to dark studies during the amnesia—and then I read the forbidden legends and met the members of ancient and ill-regarded cults. That, plainly, supplied the material for the dreams and disturbed feelings which came after the return of memory.

As for the marginal notes in dream hieroglyphs and languages unknown to me, but laid at my door by librarians—I might easily have picked up a smattering of the tongues during my secondary state, while the hieroglyphs were doubtless coined by my fancy from descriptions in old legends, and afterward woven into my dreams. I tried to verify certain points through conversations with known cult leaders, but never succeeded in establishing the right connections.

At times the parallelism of so many cases in so many distant ages continued to worry me as it had at first, but on the other hand I reflected that the excitant folklore was undoubtedly more universal in the past than in the present.

Probably all the other victims whose cases were like mine had had a long and familiar knowledge of the tales I had learned only when in my secondary state. When these victims had lost their memory, they had associated themselves with the creatures of their household myths—the fabulous invaders supposed to displace men's minds—and had thus embarked upon quests for knowledge which they thought they could take back to a fancied, nonhuman past.

Then, when their memory returned, they reversed the associative process and thought of themselves as the former captive minds instead of as the displacers. Hence the dreams and pseudo-memories following the conventional myth pattern.

Despite the seeming cumberousness

of these explanations, they came finally to supersede all others in my mind—largely because of the greater weakness of any rival theory. And a substantial number of eminent psychologists and anthropologists gradually agreed with me.

The more I reflected, the more convincing did my reasoning seem; till in the end I had a really effective bulwark against the visions and impressions which still assailed me. Suppose I did see strange things at night? These were only what I had heard and read of. Suppose I did have odd loathings and perspectives and pseudomemories? These, too, were only echoes of myths absorbed in my secondary state. Nothing that I might dream, nothing that I might feel, could be of any actual significance.

Fortified by this philosophy, I greatly improved in nervous equilibrium, even though the visions—rather than the abstract impressions—steadily became more frequent and more disturbingly detailed. In 1922 I felt able to undertake regular work again, and put my newly gained knowledge to practical use by accepting an instructorship in psychology at the university.

My old chair of political economy had long been adequately filled—besides which, methods of teaching economics had changed greatly since my heyday. My son was at this time just entering on the post-graduate studies leading to his present professorship, and we worked together a great deal.

IV.

I CONTINUED, however, to keep a careful record of the *outré* dreams which crowded upon me so thickly and vividly. Such a record, I argued, was of genuine value as a psychological document. The glimpses still seemed damnably like memories, though I fought off this im-

pression with a goodly measure of success.

In writing, I treated the phantasmata as things seen; but at all other times I brushed them aside like any gossamer illusions of the night. I had never mentioned such matters in common conversation; though reports of them, filtering out as such things will, had aroused sundry rumors regarding my mental health. It is amusing to reflect that these rumors were confined wholly to laymen, without a single champion among physicians or psychologists.

Of my visions after 1914 I will here mention only a few, since fuller accounts and records are at the disposal of the serious student. It is evident that with time the curious inhibitions somewhat waned, for the scope of my visions vastly increased. They have never, though, become other than disjointed fragments seemingly without clear motivation.

Within the dreams I seemed gradually to acquire a greater and greater freedom of wandering. I floated through many strange buildings of stone, going from one to the other along mammoth underground passages which seemed to form the common avenues of transit. Sometimes I encountered those gigantic sealed trapdoors in the lowest level, around which such an aura of fear and forbiddenness clung.

I saw tremendous tessellated pools, and rooms of curious and inexplicable utensils of myriad sorts. Then there were colossal caverns of intricate machinery whose outlines and purpose were wholly strange to me, and whose sound manifested itself only after many years of dreaming. I may here remark that sight and sound are the only senses I have ever exercised in the visionary world.

The real horror began in May, 1915, when I first saw the living things. This was before my studies had taught me what, in view of the myths and case

histories, to expect. As mental barriers wore down, I beheld great masses of thin vapor in various parts of the building and in the streets below.

These steadily grew more solid and distinct, till at last I could trace their monstrous outlines with uncomfortable ease. They seemed to be enormous, iridescent cones, about ten feet high and ten feet wide at the base, and made up of some ridgy, scaly, semielastic matter. From their apexes projected four flexible, cylindrical members, each a foot thick, and of a ridgy substance like that of the cones themselves.

These members were sometimes contracted almost to nothing, and sometimes extended to any distance up to about ten feet. Terminating two of them were enormous claws or nippers. At the end of a third were four red, trumpetlike appendages. The fourth terminated in an irregular yellowish globe some two feet in diameter and having three great dark eyes ranged along its central circumference.

Surmounting this head were four slender gray stalks bearing flowerlike appendages, whilst from its nether side dangled eight greenish antennæ or tentacles. The great base of the central cone was fringed with a rubbery, gray substance which moved the whole entity through expansion and contraction.

THEIR ACTIONS, though harmless, horrified me even more than their appearance—for it is not wholesome to watch monstrous objects doing what one had known only human beings to do. These objects moved intelligently about the great rooms, getting books from the shelves and taking them to the great tables, or *vice versa*, and sometimes writing diligently with a peculiar rod gripped in the greenish head tentacles. The huge nippers were used in carrying books and in conversation—speech consisting of a kind of clicking and scraping.

The objects had no clothing, but wore satchels or knapsacks suspended from the top of the conical trunk. They commonly carried their head and its supporting member at the level of the cone top, though it was frequently raised or lowered.

The other three great members tended to rest downward at the sides of the cone, contracted to about five feet each, when not in use. From their rate of reading, writing, and operating their machines—those on the tables seemed somehow connected with thought—I concluded that their intelligence was enormously greater than man's.

Afterward I saw them everywhere; swarming in all the great chambers and corridors, tending monstrous machines in vaulted crypts, and racing along the vast roads in gigantic, boat-shaped cars. I ceased to be afraid of them, for they seemed to form supremely natural parts of their environment.

Individual differences amongst them began to be manifest, and a few appeared to be under some kind of restraint. These latter, though showing no physical variation, had a diversity of gestures and habits which marked them off not only from the majority, but very largely from one another.

They wrote a great deal in what seemed to my cloudy vision a vast variety of characters—never the typical curvilinear hieroglyphs of the majority. A few, I fancied, used our own familiar alphabet. Most of them worked much more slowly than the general mass of the entities.

All this time my own part in the dreams seemed to be that of a disembodied consciousness with a range of vision wider than the normal, floating freely about, yet confined to the ordinary avenues and speeds of travel. Not until August, 1915, did any suggestions of bodily existence begin to harass me. I say harass, because the first phase was a purely abstract, though infinitely ter-

rible, association of my previously noted body loathing with the scenes of my visions.

For a while my chief concern during dreams was to avoid looking down at myself, and I recall how grateful I was for the total absence of large mirrors in the strange rooms. I was mightily troubled by the fact that I always saw the great tables—whose height could not be under ten feet—from a level not below that of their surfaces.

And then the morbid temptation to look down at myself became greater and greater, till one night I could not resist it. At first my downward glance revealed nothing whatever. A moment later I perceived that this was because my head lay at the end of a flexible neck of enormous length. Retracting this neck and gazing down very sharply, I saw the scaly, rugose, iridescent bulk of a vast cone ten feet tall and ten feet wide at the base. That was when I waked half of Arkham with my screaming as I plunged madly up from the abyss of sleep.

ONLY after weeks of hideous repetition did I grow half reconciled to these visions of myself in monstrous form. In the dreams I now moved bodily among the other unknown entities, reading terrible books from the endless shelves and writing for hours at the great tables with a stylus managed by the green tentacles that hung down from my head.

Snatches of what I read and wrote would linger in my memory. There were horrible annals of other worlds and other universes, and of stirrings of formless life outside of all universes. There were records of strange orders of beings which had peopled the world in forgotten parts, and frightful chronicles of grotesque-bodied intelligences which would people it millions of years after the death of the last human being.

I learned of chapters in human history

whose existence no scholar of to-day has ever suspected. Most of these writings were in the language of the hieroglyphs; which I studied in a queer way with the aid of droning machines, and which was evidently an agglutinative speech with root systems utterly unlike any found in human languages.

Other volumes were in other unknown tongues learned in the same queer way. A very few were in languages I knew. Extremely clever pictures, both inserted in the records and forming separate collections, aided me immensely. And all the time I seemed to be setting down a history of my own age in English. On waking, I could recall only minute and meaningless scraps of the unknown tongues which my dream self had mastered, though whole phases of the history stayed with me.

I learned—even before my waking self had studied the parallel cases or the old myths from which the dreams doubtless sprang—that the entities around me were of the world's greatest race, which had conquered time and had sent exploring minds into every age. I knew, too, that I had been snatched from my age while another used my body in that age, and that a few of the other strange forms housed similarly captured minds. I seemed to talk, in some odd language of claw clickings, with exiled intellects from every corner of the solar system.

There was a mind from the planet we know as Venus, which would live incalculable epochs to come, and one from an outer moon of Jupiter six million years in the past. Of Earthly minds there were some from the winged, star-headed, half-vegetable race of Paleogeon Antarctica; one from the reptile people of fabled Valusia; three from the furry prehuman Hyperborean worshippers of Tathoggua; one from the wholly abominable Tcho-Tchos; two from the Arachnida denizens of Earth's last age; five from the hardy Coleopterous

species immediately following mankind, to which the Great Race was some day to transfer its keenest minds *en masse* in the face of horrible peril; and several from different branches of humanity.

I talked with the mind of Yiang-Li, a philosopher from the cruel empire of Tsan-Chan, which is to come in 5,000 A. D.; with that of a general of the great-headed brown people who held South Africa in 50,000 B. C.; with that of a twelfth-century Florentine monk named Bartolomeo Corsi; with that of a king of Lomar who had ruled that terrible polar land one hundred thousand years before the squat, yellow Inutos came from the west to engulf it.

I talked with the mind of Nug-Soth, a magician of the dark conquerors of 16,000 A. D.; with that of a Roman named Titus Sempronius Blaesus, who had been a quaestor in Sulla's time; with that of Khephnes, an Egyptian of the 14th Dynasty, who told me the hideous secret of Nyarlathotep; with that of a priest of Atlantis' middle kingdom; with that of a Suffolk gentleman of Cromwell's day, James Woodville. Also, with that of a court astronomer of pre-Inca Peru; with that of the Australian physicist Nevil Kingston-Brown, who will die in 2,518 A. D.; with that of the archimage of vanished Yhe in the Pacific; with that of Theodotides, a Græco-Bactrian official of 200 B. C.; with that of an aged Frenchman of Louis XIII's time named Pierre-Louis Montagny; with that of Crom-Ya, a Cimmerian chieftain of 15,000 B. C.; and with so many others that my brain can not hold the shocking secrets and dizzying marvels I learned from them.

I AWAKENED each morning in a fever, sometimes frantically trying to verify or discredit such information as fell within the range of modern human knowledge. Traditional facts took on new and doubtful aspects, and I mar-

veled at the dream fancy which could invent such surprising addenda to history and science.

I shivered at the mysteries the past may conceal, and trembled at the menaces the future may bring forth. What was hinted in the speech of post-human entities of the fate of mankind produced such an effect on me that I will not set it down here.

After man there would be the mighty beetle civilization, the bodies of whose members the cream of the Great Race would seize when the monstrous doom overtook the elder world. Later, as the Earth's span closed, the transferred minds would again migrate through time and space—to another stopping place in the bodies of the bulbous vegetable entities of Mercury. But there would be races after them, clinging pathetically to the cold planet and burrowing to its horror-filled core, before the utter end.

Meanwhile, in my dreams, I wrote endlessly in that history of my own age which I was preparing—half voluntarily and half through promises of increased library and travel opportunities—for the Great Race's central archives. The archives were in a colossal subterranean structure near the city's center, which I came to know well through frequent labors and consultations. Meant to last as long as the race, and to withstand the fiercest of Earth's convulsions, this titan repository surpassed all other buildings in the massive, mountainlike firmness of its construction.

The records, written or printed on great sheets of a curiously tenacious cellulose fabric, were bound into books that opened from the top, and were kept in individual cases of a strange, extremely light rustless metal of grayish hue, decorated with mathematical designs and bearing the title in the Great Race's curvilinear hieroglyphs.

These cases were stored in tiers of rectangular vaults—like closed, locked

shelves—wrought of the same rustless metal and fastened by knobs with intricate turnings. My own history was assigned a specific place in the vaults of the lowest or vertebrate level—the section devoted to the cultures of mankind and of the furry, reptilian races immediately preceding it in Terrestrial dominance.

But none of the dreams ever gave me a full picture of daily life. All were the merest misty, disconnected fragments, and it is certain that these fragments were not unfolded in their rightful sequence. I have, for example, a very imperfect idea of my own living arrangements in the dream world; though I seem to have possessed a great stone room of my own. My restrictions as a prisoner gradually disappeared, so that some of the visions included vivid travels over the mighty jungle roads, sojourns in strange cities, and explorations of some of the vast, dark, windowless ruins from which the Great Race shrank in curious fear. There were also long sea voyages in enormous, many-decked boats of incredible swiftness, and trips over wild regions in closed, projectilelike airships lifted and moved by electrical repulsion.

Beyond the wide, warm ocean were other cities of the Great Race, and on one far continent I saw the crude villages of the black-snouted, winged creatures who would evolve as a dominant stock after the Great Race had sent its foremost minds into the future to escape the creeping horror. Flatness and exuberant green life were always the keynote of the scene. Hills were low and sparse, and usually displayed signs of volcanic forces.

OF THE ANIMALS I saw, I could write volumes. All were wild; for the Great Race's mechanized culture had long since done away with domestic beasts, while food was wholly vegetable or synthetic. Clumsy reptiles of great

bulk floundered in steaming morasses, fluttered in the heavy air, or spouted in the seas and lakes; and among these I fancied I could vaguely recognize lesser, archaic prototypes of many forms—Dinosauria, Pterodactyls, Ichthyosauria, Labyrinthodonta, Plesiosauri, and the like—made familiar through paleontology. Of birds or mammals there were none that I could discover.

The ground and swamps were constantly alive with snakes, lizards, and crocodiles, while insects buzzed incessantly among the lush vegetation. And far out at sea, unspied and unknown monsters spouted mountainous columns of foam into the vaporous sky. Once I was taken under the ocean in a gigantic submarine vessel with searchlights, and glimpsed some living horrors of awesome magnitude. I saw also the ruins of incredible sunken cities, and the wealth of orinoid, brachiopod, coral, and ichthyic life which everywhere abounded.

Of the physiology, psychology, folkways, and detailed history of the Great Race my visions preserved but little information, and many of the scattered points I here set down were gleaned from my study of old legends and other cases rather than from my own dreaming.

For in time, of course, my reading and research caught up with and passed the dreams in many phases, so that certain dream fragments were explained in advance and formed verifications of what I had learned. This consolingly established my belief that similar reading and research, accomplished by my secondary self, had formed the source of the whole terrible fabric of pseudo-memories.

The period of my dreams, apparently, was one somewhat less than 150,000,000 years ago, when the Paleozoic Age was giving place to the Mesozoic Age. The bodies occupied by the Great Race represented no surviving—or even scien-

tifically known—line of Terrestrial evolution, but were of a peculiar, closely homogeneous, and highly specialized organic type inclining as much to the vegetable as to the animal state.

Cell action was of an unique sort almost precluding fatigue, and wholly eliminating the need of sleep. Nourishment, assimilated through the red trumpetlike appendages on one of the great flexible limbs, was always semifluid and in many aspects wholly unlike the food of existing animals.

The beings had but two of the senses which we recognize—sight and hearing, the latter accomplished through the flowerlike appendages on the gray stalks above their heads. Of other and incomprehensible senses—not, however, well utilizable by alien captive minds inhabiting their bodies—they possessed many. Their three eyes were so situated as to give them a range of vision wider than the normal. Their blood was a sort of deep-greenish ichor of great thickness.

They had no sex, but reproduced through seeds or spores which clustered on their bases and could be developed only under water. Great, shallow tanks were used for the growth of their young—which were, however, reared only in small numbers on account of the longevity of individuals—four or five thousand years being the common life span.

Markedly defective individuals were quickly disposed of as soon as their defects were noticed. Disease and the approach of death were, in the absence of a sense of touch or of physical pain, recognized by purely visual symptoms.

The dead were incinerated with dignified ceremonies. Once in a while, as before mentioned, a keen mind would escape death by forward projection in time; but such cases were not numerous. When one did occur, the exiled mind from the future was treated with the

utmost kindness till the dissolution of its unfamiliar tenement.

THE GREAT RACE seemed to form a single, loosely knit nation or league, with major institutions in common, though there were four definite divisions. The political and economical system of each unit was a sort of fascistic socialism, with major resources rationally distributed, and power delegated to a small governing board elected by the votes of all able to pass certain educational and psychological tests. Family organization was not overstressed, though ties among persons of common descent were recognized, and the young were generally reared by their parents.

Resemblances to human attitudes and institutions were, of course, most marked in those fields where on the one hand highly abstract elements were concerned, or, where on the other hand there was a dominance of the basic, un-specialized urges common to all organic life. A few added likenesses came through conscious adoption as the Great Race probed the future and copied what it liked.

Industry, highly mechanized, demanded but little time from each citizen; and the abundant leisure was filled with intellectual and æsthetic activities of various sorts.

The sciences were carried to an unbelievable height of development, and art was a vital part of life, though at the period of my dreams it had passed its crest and meridian. Technology was enormously stimulated through the constant struggle to survive, and to keep in existence the physical fabric of great cities, imposed by the prodigious geological upheavals of those primal days.

Crime was surprisingly scant, and was dealt with through highly efficient policing. Punishments ranged from privilege deprivation and imprisonment to death or major emotion wrenching,

and were never administered without a careful study of the criminal's motivations.

Warfare, largely civil for the last few millennia though sometimes waged against reptilian and octopodic invaders, or against the winged, star-headed old ones who centered in the antarctic, was infrequent though infinitely devastating. An enormous army, using camera-like weapons which produced tremendous electrical effects, was kept on hand for purposes seldom mentioned, but obviously connected with the ceaseless fear of the dark, windowless elder ruins and of the great sealed trapdoors in the lowest subterranean levels.

THIS FEAR of the basalt ruins and trapdoors was largely a matter of unspoken suggestion—or, at most, of furtive, quasi whispers. Everything specific which bore on it was significantly absent from such books as were on the common shelves. It was the one subject lying altogether under a taboo among the Great Race, and seemed to be connected alike with horrible bygone struggles, and with that future peril which would some day force the race to send its keener minds ahead *en masse* in time.

Imperfect and fragmentary as were the other things presented by dreams and legends, this matter was still more bafflingly shrouded. The vague old myths avoided it—or perhaps all allusions had for some reason been excised. And in the dreams of myself and others, the hints were peculiarly few. Members of the Great Race never intentionally referred to the matter, and what could be gleaned came only from some of the more sharply observant captive minds.

According to these scraps of information, the basis of the fear was a horrible elder race of half polypous, utterly alien entities which had come through space from immeasurably distant universes and had dominated the

Earth and three other solar planets about six hundred million years ago. They were only partly material—as we understand matter—and their type of consciousness and media of perception differed widely from those of Terrestrial organisms. For example, their senses did not include that of sight; their mental world being a strange, nonvisual pattern of impressions.

They were, however, sufficiently material to use implements of normal matter when in cosmic areas containing it; and they required housing—albeit of a peculiar kind. Though their senses could penetrate all material barriers, their substance could not; and certain forms of electrical energy could wholly destroy them. They had the power of aerial motion, despite the absence of wings or any other visible means of levitation. Their minds were of such texture that no exchange with them could be effected by the Great Race.

When these things had come to the Earth they had built mighty basalt cities of windowless towers, and had preyed horribly upon the beings they found. Thus it was when the minds of the Great Race sped across the void from that obscure, transgalactic world known in the disturbing and debatable Eltdown Shards as Yith.

The newcomers, with the instruments they created, had found it easy to subdue the predatory entities and drive them down to those caverns of inner earth which they had already joined to their abodes and begun to inhabit.

Then they had sealed the entrances and left them to their fate, afterward occupying most of their great cities and preserving certain important buildings for reasons connected more with superstition than with indifference, boldness, or scientific and historical zeal.

But as the æons passed, there came vague, evil signs that the elder things were growing strong and numerous in

the inner world. There were sporadic eruptions of a particularly hideous character in certain small and remote cities of the Great Race, and in some of the deserted elder cities which the Great Race had not peopled—places where the paths to the gulfs below had not been properly sealed or guarded.

After that greater precautions were taken, and many of the paths were closed forever—though a few were left with sealed trapdoors for strategic use in fighting the elder things if ever they broke forth in unexpected places.

THE IRRUPTIONS of the elder things must have been shocking beyond all description, since they had permanently colored the psychology of the Great Race. Such was the fixed mood of horror that the very aspect of the creatures was left unmentioned. At no time was I able to gain a clear hint of what they looked like.

There were veiled suggestions of a monstrous plasticity, and of temporary lapses of visibility, while other fragmentary whispers referred to their control and military use of great winds. Singular whistling noises, and colossal footprints made up of five circular toe marks, seemed also to be associated with them.

It was evident that the coming doom so desperately feared by the Great Race—the doom that was one day to send millions of keen minds across the chasm of time to strange bodies in the safer future—had to do with a final successful irruption of the elder beings.

Mental projections down the ages had clearly foretold such a horror, and the Great Race had resolved that none who could escape should face it. That the foray would be a matter of vengeance, rather than an attempt to reoccupy the outer world, they knew from the planet's later history—for their projections showed the coming and going of sub-

sequent races untroubled by the monstrous entities.

Perhaps these entities had come to prefer Earth's inner abysses to the variable, storm-ravaged surfaces, since light meant nothing to them. Perhaps, too, they were slowly weakening with the æons. Indeed, it was known that they would be quite dead in the time of the post-human beetle race which the fleeing minds would tenant.

Meanwhile, the Great Race maintained its cautious vigilance, with potent weapons ceaselessly ready despite the horrified banishing of the subject from common speech and visible records. And always the shadow of nameless fear hung about the sealed trapdoors and the dark, windowless elder towers.

V.

THAT IS the world of which my dreams brought me dim, scattered echoes every night. I cannot hope to give any true idea of the horror and dread contained in such echoes, for it was upon a wholly intangible quality—the sharp sense of pseudomemory—that such feelings mainly depended.

As I have said, my studies gradually gave me a defense against these feelings in the form of rational, psychological explanations; and this saving influence was augmented by the subtle touch of accustomedness which comes with the passage of time. Yet, in spite of everything, the vague, creeping terror would return momentarily now and then. It did not, however, engulf me as it had before; and after 1922 I lived a very normal life of work and recreation.

In the course of years I began to feel that my experience—together with the kindred cases and the related folklore—ought to be definitely summarized and published for the benefit of serious students; hence, I prepared a series of

articles briefly covering the whole ground and illustrated with crude sketches of some of the shapes, scenes, decorative motifs, and hieroglyphs remembered from the dreams.

These appeared at various times during 1928 and 1929 in the *Journal of the American Psychological Society*, but did not attract much attention. Meanwhile, I continued to record my dreams with the minutest care, even though the growing stack of reports attained troublesomely vast proportions.

On July 10, 1934, there was forwarded to me by the Psychological Society the letter which opened the culminating and most horrible phase of the whole mad ordeal. It was post-marked Pilbarra, Western Australia, and bore the signature of one whom I found, upon inquiry, to be a mining engineer of considerable prominence. Inclosed were some very curious snapshots. I will reproduce the text in its entirety, and no reader can fail to understand how tremendous an effect it and the photographs had upon me.

I WAS, for a time, almost stunned and incredulous; for, although I had often thought that some basis of fact must underlie certain phases of the legends which had colored my dreams, I was none the less unprepared for anything like a tangible survival from a lost world remote beyond all imagination. Most devastating of all were the photographs—for here, in cold, incontrovertible realism, there stood out against a background of sand certain worn-down, water-ridged, storm-weathered blocks of stone whose slightly convex tops and slightly concave bottoms told their own story.

And when I studied them with a magnifying glass I could see all too plainly, amidst the batterings and pittings, the traces of those vast curvilinear designs and occasional hieroglyphs whose sig-

nificance had become so hideous to me. But here is the letter, which speaks for itself:

49, Dampier St.,
Pilbarra, W. Australia,
May 18, 1934.

Prof. N. W. Peaslee,
c/o Am. Psychological Society,
30 E. 41st St.,
New York City, U. S. A.

MY DEAR SIR:

A recent conversation with Dr. E. M. Boyle of Perth, and some papers with your articles which he has just sent me, make it advisable for me to tell you about certain things I have seen in the Great Sandy Desert east of our gold field here. It would seem, in view of the peculiar legends about old cities with huge stonework and strange designs and hieroglyphs which you describe, that I have come upon something very important.

The blackfellows have always been full of talk about "great stones with marks on them," and seem to have a terrible fear of such things. They connect them in some way with their common racial legends about Buddai, the gigantic old man who lies asleep for ages underground with his head on his arm, and who will some day awake and eat up the world.

There are some very old and half-forgotten tales of enormous underground huts of great stones, where passages lead down and down, and where horrible things have happened. The blackfellows claim that once some warriors, fleeing in battle, went down into one and never came back, but that frightful winds began to blow from the place soon after they went down. However, there usually isn't much in what these natives say.

But what I have to tell is more than this. Two years ago, when I was prospecting about five hundred miles east in the desert, I came on a lot of queer pieces of dressed stone perhaps 3 x 2 x 2 feet in size, and weathered and pitted to the very limit.

At first I couldn't find any of the marks the blackfellows told about, but when I looked close enough I could make out some deeply carved lines in spite of the weathering. There were peculiar curves, just like what the blackfellows

had tried to describe. I imagine there must have been thirty or forty blocks, some nearly buried in the sand, and all within a circle of perhaps a quarter of a mile in diameter.

When I saw some, I looked around closely for more, and made a careful reckoning of the place with my instruments. I also took pictures of ten or twelve of the most typical blocks, and will inclose the prints for you to see.

I turned my information and pictures into the government at Perth, but they have done nothing with them.

Then I met Dr. Boyle, who had read your articles in the *Journal of the American Psychological Society*, and, in time, happened to mention the stones. He was enormously interested and became quite excited when I showed him my snapshots, saying that the stones and the markings were just like those of the masonry you had dreamed about and seen described in legends.

He meant to write you, but was delayed. Meanwhile, he sent me most of the magazines with your articles and I saw at once, from your drawings and descriptions, that my stones are certainly the kind you mean. You can appreciate this from the inclosed prints. Later on you will hear directly from Dr. Boyle.

Now I can understand how important all this will be to you. Without question we are faced with the remains of an unknown civilization older than any dreamed of before, and forming a basis for your legends.

As a mining engineer I have some knowledge of geology, and can tell you that these blocks are so ancient they frighten me. They are mostly sandstone and granite, though one is almost certainly made of a queer sort of cement or concrete.

They bear evidence of water action, as if this part of the world had been submerged and come up again after long ages—all since those blocks were made and used. It is a matter of hundreds of thousands of years—or Heaven knows how much more. I don't like to think about it.

In view of your previous diligent work in tracking down the legends and everything connected with them, I cannot doubt but that you will want to lead an expedition to the desert and make some archaeological excavations. Both Dr. Boyle and I are prepared to cooperate in

such work if you—or organizations known to you—can furnish the funds.

I can get together a dozen miners for the heavy digging—the blackfellows would be of no use, for I've found that they have an almost maniacal fear of this particular spot. Boyle and I are saying nothing to others, for you very obviously ought to have precedence in any discoveries or credit.

The place can be reached from Pilbarra in about four days by motor tractor—which we'd need for our apparatus. It is somewhat west and south of Warburton's path of 1873, and one hundred miles southeast of Joanna Spring. We could float things up the De Grey River instead of starting from Pilbarra—but all that can be talked over later.

Roughly the stones lie at a point about 22° 3' 14" South Latitude, 125° 0' 39" East Longitude. The climate is tropical, and the desert conditions are trying.

I shall welcome further correspondence upon this subject, and am indeed keenly eager to assist in any plan you may devise. After studying your articles I am deeply impressed with the profound significance of the whole matter. Dr. Boyle will write later. When rapid communication is needed, a cable to Perth can be relayed by wireless.

Hoping profoundly for an early message,

Believe me,

Most faithfully yours,

ROBERT B. F. MACKENZIE.

OF THE immediate aftermath of this letter, much can be learned from the press. My good fortune in securing the backing of Miskatonic University was great, and both Mr. Mackenzie and Dr. Boyle proved invaluable in arranging matters at the Australian end. We were not too specific with the public about our objects, since the whole matter would have lent itself unpleasantly to sensational and jocose treatment by the cheaper newspapers. As a result, printed reports were sparing; but enough appeared to tell of our quest for reported Australian ruins and to chronicle our various preparatory steps.

Professor William Dyer of the college's geology department—leader of the

Miskatonic Antarctic Expedition of 1930-31—Ferdinand C. Ashley of the department of ancient history, and Tyler M. Freeborn of the department of anthropology—together with my son Wingate—accompanied me.

My correspondent, Mackenzie, came to Arkham early in 1935 and assisted in our final preparations. He proved to be a tremendously competent and affable man of about fifty, admirably well-read, and deeply familiar with all the conditions of Australian travel.

He had tractors waiting at Pilbarra, and we chartered a tramp steamer to get up the river to that point. We were prepared to excavate in the most careful and scientific fashion, sifting every particle of sand, and disturbing nothing which might seem to be in or near its original situation.

Sailing from Boston aboard the wheezy *Lexington* on March 28, 1935, we had a leisurely trip across the Atlantic and Mediterranean, through the Suez Canal, down the Red Sea, and across the Indian Ocean to our goal. I need not tell how the sight of the low, sandy West Australian coast depressed me, and how I detested the crude mining town and dreary gold fields where the tractors were given their last loads.

Dr. Boyle, who met us, proved to be elderly, pleasant and intelligent—and his knowledge of psychology led him into many long discussions with my son and me.

Discomfort and expectancy were oddly mingled in most of us when at length our party of eighteen rattled forth over the arid leagues of sand and rock. On Friday, May 31st, we forded a branch of the De Grey and entered the realm of utter desolation. A certain positive terror grew on me as we advanced to this actual site of the elder world behind the legends—a terror, of course, abetted by the fact that my disturbing dreams and pseudomemories still beset me with unabated force.

IT WAS on Monday, June 3rd, that we saw the first of the half-buried blocks. I cannot describe the emotions with which I actually touched—in objective reality—a fragment of Cyclopean masonry in every respect like the blocks in the walls of my dream buildings. There was a distinct trace of carving—and my hands trembled as I recognized part of a curvilinear decorative scheme made hellish to me through years of tormenting nightmare and baffling research.

A month of digging brought a total of some 1250 blocks in varying stages of wear and disintegration. Most of these were carved megaliths with curved tops and bottoms. A minority were smaller, flatter, plain-surfaced, and square or octagonally cut—like those of the floors and pavements in my dreams—while a few were singularly massive and curved or slanted in such a manner as to suggest use in vaulting or groining, or as parts of arches or round window casings.

The deeper—and the farther north and east—we dug, the more blocks we found; though we still failed to discover any trace of arrangement among them. Professor Dyer was appalled at the measureless age of the fragments, and Freeborn found traces of symbols which fitted darkly into certain Papuan and Polynesian legends of infinite antiquity. The condition and scattering of the blocks told minutely of vertiginous cycles of time and geologic upheavals of cosmic savagery.

We had an airplane with us, and my son Wingate would often go up to different heights and scan the sand-and-rock waste for signs of dim, large-scale outlines—either differences of level or trails of scattered blocks. His results were virtually negative; for whenever he would one day think he had glimpsed some significant trend, he would on his next trip find the impression replaced

by another equally insubstantial—a result of the shifting, wind-blown sand.

One or two of these ephemeral suggestions, though, affected me queerly and disagreeably. They seemed, after a fashion, to dovetail horribly with something I had dreamed or read, but which I could no longer remember. There was a terrible familiarity about them—which somehow made me look furtively and apprehensively over the abominable, sterile terrain toward the north and northeast.

Around the first week in July I developed an unaccountable set of mixed emotions about that general northeastern region. There was horror, and there was curiosity—but more than that, there was a persistent and perplexing illusion of memory.

I tried all sorts of psychological expedients to get these notions out of my head, but met with no success. Sleeplessness also gained upon me, but I almost welcomed this because of the resultant shortening of my dream periods. I acquired the habit of taking long, lone walks in the desert late at night—usually to the north or northeast, whither the sum of my strange new impulses seemed subtly to pull me.

SOMETIMES, on these walks, I would stumble over nearly buried fragments of the ancient masonry. Though there were fewer visible blocks here than where we had started, I felt sure that there must be a vast abundance beneath the surface. The ground was less level than at our camp, and the prevailing high winds now and then piled the sand into fantastic temporary hillocks—exposing low traces of the elder stones while it covered other traces.

I was queerly anxious to have the excavations extend to this territory, yet at the same time dreaded what might be revealed. Obviously, I was getting into a rather bad state—all the worse because I could not account for it.

An indication of my poor nervous health can be gained from my response to an odd discovery which I made on one of my nocturnal rambles. It was on the evening of July 11th, when the Moon flooded the mysterious hillocks with a curious pallor.

Wandering somewhat beyond my usual limits, I came upon a great stone which seemed to differ markedly from any we had yet encountered. It was almost wholly covered, but I stooped and cleared away the sand with my hands, later studying the object carefully and supplementing the Moonlight with my electric torch.

Unlike the other very large rocks, this one was perfectly square-cut, with no convex or concave surface. It seemed, too, to be of a dark basaltic substance, wholly dissimilar to the granite and sandstone and occasional concrete of the now familiar fragments.

Suddenly I rose, turned, and ran for the camp at top speed. It was a wholly unconscious and irrational flight, and only when I was close to my tent did I fully realize why I had run. Then it came to me. The queer dark stone was something I had dreamed and read about, and which was linked with the uttermost horrors of the æon-old legendry.

It was one of the blocks of that basaltic elder masonry which the fabled Great Race held in such fear—the tall, windowless ruins left by those brooding, half-material, alien things that festered in Earth's nether abysses and against whose windlike, invisible forces the trap-doors were sealed and the sleepless sentinels posted.

I remained awake all that night, but by dawn realized how silly I had been to let the shadow of a myth upset me. Instead of being frightened, I should have had a discoverer's enthusiasm.

The next forenoon I told the others about my find, and Dyer, Freeborn, Boyle, my son, and I set out to view the

anomalous block. Failure, however, confronted us. I had formed no clear idea of the stone's location, and a late wind had wholly altered the hillocks of shifting sand.

VI.

I COME NOW to the crucial and the most difficult part of my narrative—all the more difficult because I cannot be quite certain of its reality. At times I feel uncomfortably sure that I was not dreaming or deluded; and it is this feeling—in view of the stupendous implications which the objective truth of my experience would raise—which impels me to make this record.

My son—a trained psychologist with the fullest and most sympathetic knowledge of my whole case—shall be the primary judge of what I have to tell.

First let me outline the externals of the matter, as those at the camp know them: On the night of July 17-18, after a windy day, I retired early but could not sleep. Rising shortly before eleven, and afflicted as usual with that strange feeling regarding the northeastward terrain, I set out on one of my typical nocturnal walks, seeing and greeting only one person—an Australian miner named Tupper—as I left our precincts.

The Moon, slightly past full, shone from a clear sky, and drenched the ancient sands with a white, leprous radiance which seemed to me somehow infinitely evil. There was no longer any wind, nor did any return for nearly five hours, as amply attested by Tupper and others who saw me walking rapidly across the pallid, secret-guarding hillocks toward the northeast.

About 3:30 a. m., a violent wind blew up, waking every one in camp and felling three of the tents. The sky was unclouded, and the desert still blazed with that leprous Moonlight. As the party saw to the tents my absence was noted, but in view of my previous walks this circumstance gave no one alarm.

And yet, as many as three men—all Australians—seemed to feel something sinister in the air.

Mackenzie explained to Professor Freeborn that this was a fear picked up from blackfellow folklore—the natives having woven a curious fabric of malignant myth about the high winds which at long intervals sweep across the sands under a clear sky. Such winds, it is whispered, blow out of the great stone huts under the ground, where terrible things have happened—and are never felt except near places where the big marked stones are scattered. Close to four the gale subsided as suddenly as it had begun, leaving the sand hills in new and unfamiliar shapes.

It was just past five, with the bloated, fungoid Moon sinking in the west, when I staggered into camp—hatless, tattered, features scratched and ensanguined, and without my electric torch. Most of the men had returned to bed, but Professor Dyer was smoking a pipe in front of his tent. Seeing my winded and almost frenzied state, he called Dr. Boyle, and the two of them got me on my cot and made me comfortable. My son, roused by the stir, soon joined them, and they all tried to force me to lie still and attempt sleep.

But there was no sleep for me. My psychological state was very extraordinary—different from anything I had previously suffered. After a time I insisted upon talking—nervously and elaborately explaining my condition.

I told them I had become fatigued, and had lain down in the sand for a nap. There had, I said, been dreams even more frightful than usual—and when I was awakened by the sudden high wind my overwrought nerves had snapped. I had fled in panic, frequently falling over half-buried stones and thus gaining my tattered and bedraggled aspect. I must have slept long—hence the hours of my absence.

Of anything strange either seen or

experienced I hinted absolutely nothing—exercising the greatest self-control in that respect. But I spoke of a change of mind regarding the whole work of the expedition, and earnestly urged a halt in all digging toward the northeast.

My reasoning was patently weak—for I mentioned a dearth of blocks, a wish not to offend the superstitious miners, a possible shortage of funds from the college, and other things either untrue or irrelevant. Naturally, no one paid the least attention to my new wishes—not even my son, whose concern for my health was very obvious.

THE NEXT DAY I was up and around the camp, but took no part in the excavations. Seeing that I could not stop the work, I decided to return home as soon as possible for the sake of my nerves, and made my son promise to fly me in the plane to Perth—a thousand miles to the southwest—as soon as he had surveyed the region I wished let alone.

If, I reflected, the thing I had seen was still visible, I might decide to attempt a specific warning even at the cost of ridicule. It was just conceivable that the miners who knew the local folklore might back me up. Humoring me, my son made the survey that very afternoon, flying over all the terrain my walk could possibly have covered. Yet nothing of what I had found remained in sight.

It was the case of the anomalous basalt block all over again—the shifting sand had wiped out every trace. For an instant I half regretted having lost a certain awesome object in my stark fright—but now I know that the loss was merciful. I can still believe my whole experience an illusion—especially if, as I devoutly hope, that hellish abyss is never found.

Wingate took me to Perth on July 20th, though declining to abandon the expedition and return home. He stayed

with me until the 25th, when the steamer for Liverpool sailed. Now, in the cabin of the *Empress*, I am pondering long and frantically upon the entire matter, and have decided that my son, at least, must be informed. It shall rest with him whether to diffuse the matter more widely.

In order to meet any eventuality I have prepared this summary of my background—as already known in a scattered way to others—and will now tell as briefly as possible what seemed to happen during my absence from the camp that hideous night.

Nerves on edge, and whipped into a kind of perverse eagerness by that inexplicable, dread-mingled, mnemonic urge toward the northeast, I plodded on beneath the evil, burning Moon. Here and there I saw, half shrouded by the sand, those primal Cyclopean blocks left from nameless and forgotten æons.

The incalculable age and brooding horror of this monstrous waste began to oppress me as never before, and I could not keep from thinking of my maddening dreams, of the frightful legends which lay behind them, and of the present fears of natives and miners concerning the desert and its carven stones.

And yet I plodded on as if to some eldritch rendezvous—more and more assailed by bewildering fancies, compulsions, and pseudomemories. I thought of some of the possible contours of the lines of stones as seen by my son from the air, and wondered why they seemed at once so ominous and so familiar. Something was fumbling and rattling at the latch of my recollection, while another unknown force sought to keep the portal barred.

The night was windless, and the pallid sand curved upward and downward like frozen waves of the sea. I had no goal, but somehow plowed along as if with fate-bound assurance. My dreams welled up into the waking world, so

that each sand-embedded megalith seemed part of endless rooms and corridors of prehuman masonry, carved and hieroglyphed with symbols that I knew too well from years of custom as a captive mind of the Great Race.

At moments I fancied I saw those omniscient, conical horrors moving about at their accustomed tasks, and I feared to look down lest I find myself one with them in aspect. Yet all the while I saw the sand-covered blocks as well as the rooms and corridors; the evil, burning Moon as well as the lamps of luminous crystal; the endless desert as well as the waving ferns beyond the windows. I was awake and dreaming at the same time.

I do not know how long or how far—or indeed, in just what direction—I had walked when I first spied the heap of blocks bared by the day's wind. It was the largest group in one place that I had seen so far, and so sharply did it impress me that the visions of fabulous æons faded suddenly away.

Again there were only the desert and the evil Moon and the shards of an unguessed past. I drew close and paused, and cast the added light of my electric torch over the tumbled pile. A hillock had blown away, leaving a low, irregularly round mass of megaliths and smaller fragments some forty feet across and from two to eight feet high.

From the very outset I realized that there was some utterly unprecedented quality about those stones. Not only was the mere number of them quite without parallel, but something in the sand-worn traces of design arrested me as I scanned them under the mingled beams of the Moon and my torch.

Not that any one differed essentially from the earlier specimens we had found. It was something subtler than that. The impression did not come when I looked at one block alone, but only when I ran my eye over several almost simultaneously.

Then, at last, the truth dawned upon me. The curvilinear patterns on many of those blocks were closely related—parts of one vast decorative conception. For the first time in this unshaken waste I had come upon a mass of masonry in its old position—tumbled and fragmentary, it is true, but none the less existing in a very definite sense.

MOUNTING at a low place, I clambered laboriously over the heap; here and there clearing away the sand with my fingers, and constantly striving to

interpret varieties of size, shape, and style, and relationships of design.

After a while I could vaguely guess at the nature of the bygone structure, and at the designs which had once stretched over the vast surfaces of the primal masonry. The perfect identity of the whole with some of my dream glimpses appalled and unnerved me.

This was once a Cyclopean corridor thirty feet wide and thirty feet tall, paved with octagonal blocks and solidly vaulted overhead. There would have been rooms opening off on the right,



Never before had human feet pressed upon those immemorial pavements!

and at the farther end one of those strange inclined planes would have wound down to still lower depths.

I started violently as these conceptions occurred to me, for there was more in them than the blocks themselves had supplied. How did I know that this level should have been far underground? How did I know that the plane leading upward should have been behind me? How did I know that the long subterranean passage to the square of pillars ought to lie on the left one level above me?

How did I know that the room of machines and the rightward-leading tunnel to the central archives ought to lie two levels below? How did I know that there would be one of those horrible, metal-banded trapdoors at the very bottom four levels down? Bewildered by this intrusion from the dream world, I found myself shaking and bathed in a cold perspiration.

Then, as a last, intolerable touch, I felt that faint, insidious stream of cool air trickling upward from a depressed place near the center of the huge heap. Instantly, as once before, my visions faded, and I saw again only the evil Moonlight, the brooding desert, and the spreading tumulus of Paleogean masonry. Something real and tangible, yet fraught with infinite suggestions of nighted mystery, now confronted me. For that stream of air could argue but one thing—a hidden gulf of great size beneath the disordered blocks on the surface.

My first thought was of the sinister blackfellow legends of vast underground huts among the megaliths where horrors happen and great winds are born. Then thoughts of my own dreams came back, and I felt dim pseudomemories tugging at my mind. What manner of place lay below me? What primal, inconceivable source of age-old myth cycles and haunting nightmares might I be on the brink of uncovering?

It was only for a moment that I hesitated, for more than curiosity and scientific zeal was driving me on and working against my growing fear.

I seemed to move almost automatically, as if in the clutch of some compelling fate. Pocketing my torch, and struggling with a strength that I had not thought I possessed, I wrenched aside first one titan fragment of stone and then another, till there welled up a strong draft whose dampness contrasted oddly with the desert's dry air. A black rift began to yawn, and at length—when I had pushed away every fragment small enough to budge—the leprous Moonlight blazed on an aperture of ample width to admit me.

I drew out my torch and cast a brilliant beam into the opening. Below me was a chaos of tumbled masonry, sloping roughly down toward the north at an angle of about forty-five degrees, and evidently the result of some bygone collapse from above.

Between its surface and the ground level was a gulf of impenetrable blackness at whose upper edge were signs of gigantic, stress-heaved vaulting. At this point, it appeared, the desert's sands lay directly upon a floor of some titan structure of Earth's youth—how preserved through æons of geologic convulsion I could not then and cannot now even attempt to guess.

IN RETROSPECT, the barest idea of a sudden, lone descent into such a doubtful abyss—and at a time when one's whereabouts were unknown to any living soul—seems like the utter apex of insanity. Perhaps it was—yet that night I embarked without hesitancy upon such a descent.

Again there was manifest that lure and driving of fatality which had all along seemed to direct my course. With torch flashing intermittently to save the battery, I commenced a mad scramble down the sinister, Cyclopean incline be-

low the opening—sometimes facing forward as I found good hand and foot holds, and at other times turning to face the heap of megaliths as I clung and fumbled more precariously.

In two directions beside me, distant walls of carven, crumbling masonry loomed dimly under the direct beams of my torch. Ahead, however, was only unbroken blackness.

I kept no track of time during my downward scramble. So seething with baffling hints and images was my mind that all objective matters seemed withdrawn to incalculable distances. Physical sensation was dead, and even fear remained as a wraithlike, inactive gargoyle leering impotently at me.

Eventually I reached a level floor strewn with fallen blocks, shapeless fragments, of stone, and sand and detritus of every kind. On either side—perhaps thirty feet apart—rose massive walls culminating in huge groinings. That they were carved I could just discern, but the nature of the carvings was beyond my perception.

What held me most was the vaulting overhead. The beam from my torch could not reach the roof, but the lower parts of the monstrous arches stood out distinctly. And so perfect was their identity with what I had seen in countless dreams of the elder world, that I trembled actively for the first time.

Behind and high above, a faint luminous blur told of the distant Moonlighted world outside. Some vague shred of caution warned me that I should not let it out of my sight, lest I have no guide for my return.

I now advanced toward the wall at my left, where the traces of carving seemed to have acted on the sandstone nearly as hard to traverse as the downward heap had been, but I managed to pick my difficult way.

At one place I heaved aside some blocks and kicked away the detritus to

see what the pavement was like, and shuddered at the utter, fateful familiarity of the great octagonal stones whose buckled surface still held roughly together.

Reaching a convenient distance from the wall, I cast the searchlight slowly and carefully over its worn remnants of carving. Some bygone influx of water seemed to have acted on the sandstone surface, while there were curious incrustations which I could not explain.

In places the masonry was very loose and distorted, and I wondered how many æons more this primal, hidden edifice could keep its remaining traces of form amidst Earth's heavings.

BUT it was the carvings themselves that excited me most. Despite their time-crumbled state, they were relatively easy to trace at close range; and the complete, intimate familiarity of every detail almost stunned my imagination. That the major attributes of this hoary masonry should be familiar, was not beyond normal credibility.

Powerfully impressing the weavers of certain myths, they had become embodied in a stream of cryptic lore which, somehow, coming to my notice during the amnesic period, had evoked vivid images in my subconscious mind.

But how could I explain the exact and minute fashion in which each line and spiral of these strange designs tallied with what I had dreamed for more than a score of years? What obscure, forgotten iconography could have reproduced each subtle shading and nuance which so persistently, exactly, and unvaryingly besieged my sleeping vision night after night?

For this was no chance or remote resemblance. Definitely and absolutely, the millennially ancient, æon-hidden corridor in which I stood was the original of something I knew in sleep as intimately as I knew my own house in

Crane Street, Arkham. True, my dreams showed the place in its undecayed prime; but the identity was no less real on that account. I was wholly and horribly oriented.

The particular structure I was in was known to me. Known, too, was its place in that terrible elder city of dream. That I could visit unerringly any point in that structure or in that city which had escaped the changes and devastations of uncounted ages, I realized with hideous and instinctive certainty. What in Heaven's name could all this mean? How had I come to know what I knew? And what awful reality could lie behind those antique tales of the beings who had dwelt in this labyrinth of primordial stone?

Words can convey only fractionally the welter of dread and bewilderment which ate at my spirit. I knew this place. I knew what lay below me, and what had lain overhead before the myriad towering stories had fallen to dust and débris and the desert. No need now, I thought with a shudder, to keep that faint blur of Moonlight in view.

I was torn betwixt a longing to flee and a feverish mixture of burning curiosity and driving fatality. What had happened to this monstrous megalopolis of old in the millions of years since the time of my dreams? Of the subterranean mazes which had underlain the city and linked all the titan towers, how much had still survived the writhings of Earth's crust?

Had I come upon a whole buried world of unholy archaism? Could I still find the house of the writing master, and the tower where S'gg'ha, the captive mind from the star-headed vegetable carnivores of antarctica, had chiseled certain pictures on the blank spaces of the walls?

Would the passage at the second level down, to the hall of the alien minds, be still unchoked and traversable? In

that hall the captive mind of an incredible entity—a half-plastic denizen of the hollow interior of an unknown trans-Plutonian planet eighteen million years in the future—had kept a certain thing which it had modeled from clay.

I shut my eyes and put my hand to my head in a vain, pitiful effort to drive these insane dream fragments from my consciousness. Then, for the first time I felt acutely the coolness, motion, and dampness of the surrounding air. Shuddering, I realized that a vast chain of æon-dead black gulfs must indeed be yawning somewhere beyond and below me.

I thought of the frightful chambers and corridors and inclines as I recalled them from my dreams. Would the way to the central archives still be open? Again that driving fatality tugged insistently at my brain as I recalled the awesome records that once lay cased in those rectangular vaults of rustless metal.

There, said the dreams and legends, had reposed the whole history, past and future, of the cosmic space-time continuum—written by captive minds from every orb and every age in the solar system. Madness, of course—but had I not now stumbled into a nighted world as mad as I?

I thought of the locked metal shelves, and of the curious knob twistings needed to open each one. My own came vividly into my consciousness. How often had I gone through that intricate routine of varied turns and pressures in the Terrestrial vertebrate section on the lowest level! Every detail was fresh and familiar.

If there were such a vault as I had dreamed of, I could open it in a moment. It was then that madness took me utterly. An instant later, and I was leaping and stumbling over the rocky débris toward the well-remembered incline to the depths below.

VII.

FROM that point forward my impressions are scarcely to be relied on—indeed, I still possess a final, desperate hope that they all form parts of some demonic dream or illusion born of delirium. A fever raged in my brain, and everything came to me through a kind of haze—sometimes only intermittently.

The rays of my torch shot feebly into the engulfing blackness, bringing phantasmal flashes of hideously familiar walls and carvings, all blighted with the decay of ages. In one place a tremendous mass of vaulting had fallen, so that I had to clamber over a mighty mound of stones reaching almost to the ragged, grotesquely stalactited roof.

It was all the ultimate apex of nightmare, made worse by that blasphemous tug of pseudomemory. One thing only was unfamiliar, and that was my own size in relation to the monstrous masonry. I felt oppressed by a sense of unwonted smallness, as if the sight of these towering walls from a mere human body was something wholly new and abnormal. Again and again I looked nervously down at myself, vaguely disturbed by the human form I possessed.

Onward through the blackness of the abyss I leaped, plunged and staggered—often falling and bruising myself, and once nearly shattering my torch. Every stone and corner of that demonic gulf was known to me; and at many points I stopped to cast beams of light through choked and crumbling, yet familiar, archways.

Some rooms had totally collapsed; others were bare, or débris-filled. In a few I saw masses of metal—some fairly intact, some broken, and some crushed or battered—which I recognized as the colossal pedestals or tables of my dreams. What they could in truth have been, I dared not guess.

I found the downward incline and be-

gan its descent—though after a time halted by a gaping, ragged chasm whose narrowest point could not be much less than four feet across. Here the stonework had fallen through, revealing incalculable inky depths beneath.

I knew there were two more cellar levels in this titan edifice, and trembled with fresh panic as I recalled the metal-clamped trapdoor on the lowest one. There could be no guards now—for what had lurked beneath had long since done its hideous work and sunk into its long decline. By the time of the post-human beetle race it would be quite dead. And yet, as I thought of the native legends, I trembled anew.

It cost me a terrible effort to vault that yawning chasm, since the littered floor prevented a running start—but madness drove me on. I chose a place close to the left-hand wall—where the rift was least wide and the landing spot reasonably clear of dangerous débris—and after one frantic moment reached the other side in safety.

At last, gaining the lower level, I stumbled on past the archway of the room of machines, within which were fantastic ruins of metal, half buried beneath fallen vaulting. Everything was where I knew it would be, and I climbed confidently over the heaps which barred the entrance of a vast transverse corridor. This, I realized, would take me under the city to the central archives.

Endless ages seemed to unroll as I stumbled, leaped, and crawled along that débris-cluttered corridor. Now and then I could make out carvings on the age-stained walls—some familiar, others seemingly added since the period of my dreams. Since this was a subterranean house-connecting highway, there were no archways save when the route led through the lower levels of various buildings.

At some of these intersections I turned aside long enough to look down well-remembered corridors and into well-

remembered rooms. Twice only did I find any radical changes from what I had dreamed of—and in one of these cases I could trace the sealed-up outlines of the archway I remembered.

I SHOOK violently, and felt a curious surge of retarding weakness as I steered a hurried and reluctant course through the crypt of one of those great windowless, ruined towers whose alien, basalt masonry bespoke a whispered and horrible origin.

This primal vault was round and fully two hundred feet across, with nothing carved upon the dark-hued stonework. The floor was here free from anything save dust and sand, and I could see the apertures leading upward and downward. There were no stairs nor inclines—indeed, my dreams had pictured those elder towers as wholly untouched by the fabulous Great Race. Those who had built them had not needed stairs or inclines.

In the dreams, the downward aperture had been tightly sealed and nervously guarded. Now it lay open—black and yawning, and giving forth a current of cool, damp air. Of what limitless caverns of eternal night might brood below, I would not permit myself to think.

Later, clawing my way along a badly heaped section of the corridor, I reached a place where the roof had wholly caved in. The débris rose like a mountain, and I climbed up over it, passing through a vast, empty space where my torchlight could reveal neither walls nor vaulting. This, I reflected, must be the cellar of the house of the metal purveyors, fronting on the third square not far from the archives. What had happened to it I could not conjecture.

I found the corridor again beyond the mountain of detritus and stone, but after a short distance encountered a wholly choked place where the fallen vaulting almost touched the perilously sagging ceiling. How I managed to wrench and

tear aside enough blocks to afford a passage, and how I dared disturb the tightly packed fragments when the least shift of equilibrium might have brought down all the tons of superincumbent masonry to crush me to nothingness, I do not know.

It was sheer madness that impelled and guided me—if, indeed, my whole underground adventure was not—as I hope—a hellish delusion or phase of dreaming. But I did make—or dream that I made—a passage that I could squirm through. As I wriggled over the mound of débris—my torch, switched continuously on, thrust deeply in my mouth—I felt myself torn by the fantastic stalactites of the jagged floor above me.

I was now close to the great underground archival structure which seemed to form my goal. Sliding and clambering down the farther side of the barrier, and picking my way along the remaining stretch of corridor with handheld, intermittently flashing torch, I came at last to a low, circular crypt with arches—still in a marvelous state of preservation—opening off on every side.

The walls, or such parts of them as lay within reach of my torchlight, were densely hieroglyphed and chiseled with typical curvilinear symbols—some added since the period of my dreams.

This, I realized, was my fated destination, and I turned at once through a familiar archway on my left. That I could find a clear passage up and down the incline to all the surviving levels, I had, oddly, little doubt. This vast, Earth-protected pile, housing the annals of all the solar system, had been built with supernal skill and strength to last as long as that system itself.

Blocks of stupendous size poised with mathematical genius and bound with cements of incredible toughness, had combined to form a mass as firm as the planet's rocky core. Here, after ages more prodigious than I could sanely

grasp, its buried bulk stood in all its essential contours, the vast, dust-drifted floors scarce sprinkled with the litter elsewhere so dominant.

THE relatively easy walking from this point onward went curiously to my head. All the frantic eagerness hitherto frustrated by obstacles now took itself out in a kind of febrile speed, and I literally raced along the low-roofed, monstrously well-remembered aisles beyond the archway.

I was past being astonished by the familiarity of what I saw. On every hand the great hieroglyphed metal shelf doors loomed monstrously; some yet in place, others sprung open, and still others bent and buckled under bygone geological stresses not quite strong enough to shatter the titan masonry.

Here and there a dust-covered heap beneath a gaping, empty shelf seemed to indicate where cases had been shaken down by Earth tremors. On occasional pillars were great symbols and letters proclaiming classes and subclasses of volumes.

Once I paused before an open vault where I saw some of the accustomed metal cases still in position amidst the omnipresent gritty dust. Reaching up, I dislodged one of the thinner specimens with some difficulty, and rested it on the floor for inspection. It was titled in the prevailing curvilinear hieroglyphs, though something in the arrangement of the character seemed subtly unusual.

The odd mechanism of the hooked fastener was perfectly well known to me, and I snapped up the still rustless and workable lid and drew out the book within. The latter, as expected, was some twenty by fifteen inches in area, and two inches thick; the thin metal covers opening at the top.

Its tough cellulose pages seemed unaffected by the myriad cycles of time they had lived through, and I studied the queerly pigmented, brush-drawn let-

ters of the text—symbols unlike either the usual curved hieroglyphs or any alphabet known to human scholarship—with a haunting, half-aroused memory.

It came to me that this was the language used by a captive mind I had known slightly, in my dreams—a mind from a large asteroid on which had survived much of the archaic life and lore of the primal planet whereof it formed a fragrant. At the same time I recalled that this level of the archives was devoted to volumes dealing with the non-Terrestrial planets.

As I ceased poring over this incredible document I saw that the light of my torch was beginning to fail, hence quickly inserted the extra battery I always had with me. Then, armed with the stronger radiance, I resumed my feverish racing through unending tangles of aisles and corridors—recognizing now and then some familiar shelf, and vaguely annoyed by the acoustic conditions which made my footfalls echo incongruously in these catacombs.

The very prints of my shoes behind me in the millennially untrampled dust made me shudder. Never before, if my mad dreams held anything of truth, had human feet pressed upon those immemorial pavements.

Of the particular goal of my insane racing, my conscious mind held no hint. There was, however, some force of evil potency pulling at my dazed will and buried recollection, so that I vaguely felt I was not running at random.

I CAME to a downward incline and followed it to profounder depths. Floors flashed by me as I raced, but I did not pause to explore them. In my whirling brain there had begun to beat a certain rhythm which set my right hand twitching in unison. I wanted to unlock something, and felt that I knew all the intricate twists and pressures needed to do it. It would be like a modern safe with a combination lock.

Dream or not, I had once known and still knew. How any dream—or any scrap of unconsciously absorbed legend—could have taught me a detail so minute, so intricate, and so complex, I did not attempt to explain to myself. I was beyond all coherent thought. For was not this whole experience—this shocking familiarity with a set of unknown ruins, and this monstrously exact identity of everything before me with what only dreams and scraps of myth could have suggested—a horror beyond all reason?

Probably it was my basic conviction then—as it is now during my saner moments—that I was not awake at all, and that the entire buried city was a fragment of febrile hallucination.

Eventually, I reached the lowest level and struck off to the right of the incline. For some shadowy reason I tried to soften my steps, even though I lost speed thereby. There was a space I was afraid to cross on this last, deeply buried floor.

As I drew near it I recalled what thing in that space I feared. It was merely one of the metal-barred and closely guarded trapdoors. There would be no guards now, and on that account I trembled and tiptoed as I had done in passing through that black basalt vault where a similar trapdoor had yawned.

I felt a current of cool, damp air as I had felt there, and wished that my course led in another direction. Why I had to take the particular course I was taking, I did not know.

When I came to the space I saw that the trapdoor yawned widely open. Ahead, the shelves began again, and I glimpsed on the floor before one of them a heap very thinly covered with dust, where a number of cases had recently fallen. At the same moment a fresh wave of panic clutched me, though for some time I could not discover why.

Heaps of fallen cases were not uncommon, for all through the æons this

lightless labyrinth had been racked by the heavings of Earth and had echoed at intervals to the deafening clatter of toppling objects. It was only when I was nearly across the space that I realized why I shook so violently.

Not the heap, but something about the dust of the level floor, was troubling me. In the light of my torch it seemed as if that dust were not as even as it ought to be—there were places where it looked thinner, as if it had been disturbed not many months before. I could not be sure, for even the apparently thinner places were dusty enough; yet a certain suspicion of regularity in the fancied unevenness was highly disquieting.

When I brought the torchlight close to one of the queer places I did not like what I saw—for the illusion of regularity became very great. It was as if there were regular lines of composite impressions—impressions that went in threes, each slightly over a foot square, and consisting of five nearly circular three-inch prints, one in advance of the other four.

These possible lines of foot-square impressions appeared to lead in two directions, as if something had gone somewhere and returned. They were, of course, very faint, and may have been illusions or accidents; but there was an element of dim, fumbling terror about the way I thought they ran. For at one end of them was the heap of cases which must have clattered down not long before, while at the other end was the ominous trapdoor with the cool, damp wind, yawning unguarded down to abysses past imagination.

VIII.

THAT my strange sense of compulsion was deep and overwhelming is shown by its conquest of my fear. No rational motive could have drawn me on after that hideous suspicion of prints

and the creeping dream memories it excited. Yet my right hand, even as it shook with fright, still twitched rhythmically in its eagerness to turn a lock it hoped to find. Before I knew it I was past the heap of lately fallen cases and running on tiptoe through aisles of utterly unbroken dust toward a point which I seemed to know morbidly, horribly well.

My mind was asking itself questions whose origin and relevancy I was only beginning to guess. Would the shelf be reachable by a human body? Could my human hand master all the æon-remembered motions of the lock? Would the lock be undamaged and workable? And what would I do—what dare I do—with what—as I now commenced to realize—I both hoped and feared to find? Would it prove the awesome, brain-shattering truth of something past normal conception, or show only that I was dreaming?

The next I knew I had ceased my tiptoed racing and was standing still, staring at a row of maddeningly familiar hieroglyphed shelves. They were in a state of almost perfect preservation, and only three of the doors in this vicinity had sprung open.

My feelings toward these shelves cannot be described—so utter and insistent was the sense of old acquaintance. I was looking high up at a row near the top and wholly out of my reach, and wondering how I could climb to best advantage. An open door four rows from the bottom would help, and the locks of the closed doors formed possible holds for hands and feet. I would grip the torch between my teeth, as I had in other places where both hands were needed. Above all I must make no noise.

How to get down what I wished to remove would be difficult, but I could probably hook its movable fastener in my coat collar and carry it like a knapsack. Again I wondered whether the

lock would be undamaged. That I could repeat each familiar motion I had not the least doubt. But I hoped the thing would not scrape or creak—and that my hand could work it properly.

Even as I thought these things I had taken the torch in my mouth and begun to climb. The projecting locks were poor supports; but, as I had expected, the opened shelf helped greatly. I used both the swinging door and the edge of the aperture itself in my ascent, and managed to avoid any loud creaking.

Balanced on the upper edge of the door, and leaning far to my right, I could just reach the lock I sought. My fingers, half numb from climbing, were very clumsy at first; but I soon saw that they were anatomically adequate. And the memory rhythm was strong in them.

Out of unknown gulfs of time the intricate, secret motions had somehow reached my brain correctly in every detail—for after less than five minutes of trying there came a click whose familiarity was all the more startling because I had not consciously anticipated it. In another instant the metal door was slowly swinging open with only the faintest grating sound.

DAZEDLY I looked over the row of grayish case ends thus exposed, and felt a tremendous surge of some wholly inexplicable emotion. Just within reach of my right hand was a case whose curving hieroglyphs made me shake with a pang infinitely more complex than one of mere fright. Still shaking, I managed to dislodge it amidst a shower of gritty flakes, and ease it over toward myself without any violent noise.

Like the other case I had handled, it was slightly more than twenty by fifteen inches in size, with curved mathematical designs in low relief. In thickness it just exceeded three inches.

Crudely wedging it between myself and the surface I was climbing, I fum-

bled with the fastener and finally got the hook free. Lifting the cover, I shifted the heavy object to my back, and let the hook catch hold of my collar. Hands now free, I awkwardly clambered down to the dusty floor and prepared to inspect my prize.

Kneeling in the gritty dust, I swung the case around and rested it in front of me. My hands shook, and I dreaded to draw out the book within almost as much as I longed—and felt compelled—to do so. It had very gradually become clear to me what I ought to find, and this realization nearly paralyzed my faculties.

If the thing were there—and if I were not dreaming—the implications would be quite beyond the power of the human spirit to bear. What tormented me most was my momentary inability to feel that my surroundings were a dream. The sense of reality was hideous—and again becomes so as I recall the scene.

At length I tremblingly pulled the book from its container and stared fascinatedly at the well-known hieroglyphs on the cover. It seemed to be in prime condition, and the curvilinear letters of the title held me in almost as hypnotized a state as if I could read them. Indeed, I cannot swear that I did not actually read them in some transient and terrible access of abnormal memory.

I do not know how long it was before I dared to lift that thin metal cover. I temporized and made excuses to myself. I took the torch from my mouth and shut it off to save the battery. Then, in the dark, I collected my courage—finally lifting the cover without turning on the light. Last of all, I did indeed flash the torch upon the exposed page—steeling myself in advance to suppress any sound no matter what I should find.

I looked for an instant, then almost collapsed. Clenching my teeth, however, I kept silent. I sank wholly to the

floor and put a hand to my forehead amidst the engulfing blackness. What I dreaded and expected was there. Either I was dreaming, or time and space had become a mockery.

I must be dreaming—but I would test the horror by carrying this thing back and showing it to my son if it were indeed a reality. My head swam frightfully, even though there were no visible objects in the unbroken gloom to swirl about me. Ideas and images of the starkest terror—excited by the vistas which my glimpse had opened up—began to throng in upon me and cloud my senses.

I thought of those possible prints in the dust, and trembled at the sound of my own breathing as I did so. Once again I flashed on the light and looked at the page as a serpent's victim may look at his destroyer's eyes and fangs.

Then, with clumsy fingers, in the dark, I closed the book, put it in its container, and snapped the lid and the curious, hooked fastener. This was what I must carry back to the outer world if it truly existed—if the whole abyss truly existed—if I, and the world itself, truly existed.

JUST when I tottered to my feet and commenced my return I cannot be certain. It came to me oddly—as a measure of my sense of separation from the normal world—that I did not even once look at my watch during those hideous hours underground.

Torch in hand, and with the ominous case under one arm, I eventually found myself tiptoeing in a kind of silent panic past the draft-giving abyss and those lurking suggestions of prints. I lessened my precautions as I climbed up the endless inclines, but could not shake off a shadow of apprehension which I had not felt on the downward journey.

I dreaded having to repass through that black basalt crypt that was older than the city itself, where cold drafts

welled up from unguarded depths. I thought of that which the Great Race had feared, and of what might still be lurking—be it ever so weak and dying—down there. I thought of those five-circle prints and of what my dreams had told me of such prints—and of strange winds and whistling noises associated with them. And I thought of the tales of the modern blackfellows, wherein the horror of great winds and nameless subterranean ruins was dwelt upon.

I knew from a carved wall symbol the right floor to enter, and came at last—after passing that other book I had examined—to the great circular space with the branching archways. On my right, and at once recognizable, was the arch through which I had arrived. This I now entered, conscious that the rest of my course would be harder because of the tumbled state of the masonry outside the archive building. My new metal-cased burden weighed upon me, and I found it harder and harder to be quiet as I stumbled among débris and fragments of every sort.

Then I came to the ceiling-high mound of débris through which I had wrenched a scanty passage. My dread at wriggling through again was infinite, for my first passage had made some noise, and I now—after seeing those possible prints—dreaded sound above all things. The case, too, doubled the problem of traversing the narrow crevice.

But I clambered up the barrier as best I could, and pushed the case through the aperture ahead of me. Then, torch in mouth, I scrambled through myself—my back torn as before by stalactites.

As I tried to grasp the case again, it fell some distance ahead of me down the slope of the débris, making a disturbing clatter and arousing echoes which sent me into a cold perspiration. I lunged for it at once, and regained it without further noise—but a moment afterward the slipping of blocks under

my feet raised a sudden and unprecedented din.

That din was my undoing. For, falsely or not, I thought I heard it answered in a terrible way from spaces far behind me. I thought I heard a shrill, whistling sound, like nothing else on Earth, and beyond any adequate verbal description. If so, what followed has a certain grim irony—since, save for the panic of this thing, the second thing might never have happened.

As it was, my frenzy was absolute and unrelieved. Taking my torch in my hand and clutching feebly at the case, I leaped and bounded wildly ahead with no idea in my brain beyond a mad desire to race out of these nightmare ruins to the waking world of desert and Moonlight which lay so far above.

I hardly knew it when I reached the mountain of débris which towered into the vast blackness beyond the eaved-in roof, and bruised and cut myself repeatedly in scrambling up its steep slope of jagged blocks and fragments.

Then came the great disaster. Just as I blindly crossed the summit, unprepared for the sudden dip ahead, my feet slipped utterly and I found myself involved in a mangling avalanche of sliding masonry whose cannon-loud uproar split the black, cavern air in a deafening series of Earth-shaking reverberations.

I HAVE no recollection of emerging from this chaos, but a momentary fragment of consciousness shows me as plunging and tripping and scrambling along the corridor amidst the clangor—case and torch still with me.

Then, just as I approached that primal basalt crypt I had so dreaded, utter madness came. For as the echoes of the avalanche died down, there became audible a repetition of that frightful alien whistling I thought I had heard before. This time there was no doubt about it—and what was worse, it came

from a point not behind but *ahead of me.*

Probably I shrieked aloud then. I have a dim picture of myself as flying through the hellish basalt vault of the elder things, and hearing that damnable alien sound piping up from the open, unguarded door of limitless nether blacknesses. There was a wind, too—not merely a cool, damp draft, but a violent, purposeful blast belching savagely and frigidly from that abominable gulf whence the obscene whistling came.

There are memories of leaping and lurching over obstacles of every sort, with that torrent of wind and shrieking sound growing moment by moment, and seeming to curl and twist purposefully around me as it struck out wickedly from the spaces behind and beneath.

Though in my rear, that wind had the odd effect of hindering instead of aiding my progress; as if it acted like a noose or lasso thrown around me. Heedless of the noise I made, I clattered over a great barrier of blocks and was again in the structure that led to the surface.

I recall glimpsing the archway to the room of machines and almost crying out as I saw the incline leading down to where one of those blasphemous trapdoors must be yawning two levels below. But instead of crying out I muttered over and over to myself that this was all a dream from which I must soon wake. Perhaps I was in camp—perhaps I was at home in Arkham. As these hopes bolstered up my sanity I began to mount the incline to the higher level.

I knew, of course, that I had the four-foot cleft to recross, yet was too racked by other fears to realize the full horror until I came almost upon it. On my descent, the leap across had been easy—but could I clear the gap as readily when going uphill, and hampered by fright, exhaustion, the weight of the metal case, and the anomalous backward

tug of that demon wind? I thought of these things at the last moment, and thought also of the nameless entities which might be lurking in the black abysses below the chasm.

My wavering torch was growing feeble, but I could tell by some obscure memory when I neared the cleft. The chill blasts of wind and the nauseous whistling shrieks behind me were for the moment like a merciful opiate, dulling my imagination to the horror of the yawning gulf ahead. And then I became aware of the added blasts and whistling in front of me—tides of abomination surging up through the cleft itself from depths unimagined and unimaginable.

Now, indeed, the essence of pure nightmare was upon me. Sanity departed—and, ignoring everything except the animal impulse of flight, I merely struggled and plunged upward over the incline's debris as if no gulf had existed. Then I saw the chasm's edge, leaped frenziedly with every ounce of strength I possessed, and was instantly engulfed in a pandemonic vortex of loathsome sound and utter, materially tangible blackness.

THAT IS the end of my experience, so far as I can recall. Any further impressions belong wholly to the domain of phantasmagoric delirium. Dream, madness, and memory merged wildly together in a series of fantastic, fragmentary delusions which can have no relation to anything real.

There was a hideous fall through incalculable leagues of viscous, sentient darkness, and a babel of noises utterly alien to all that we know of the Earth and its organic life. Dormant, rudimentary senses seemed to start into vitality within me, telling of pits and voids peopled by floating horrors and leading to sunless crags and oceans and teeming cities of windowless, basalt towers upon which no light ever shone.

Secrets of the primal planet and its immemorial æons flashed through my brain without the aid of sight or sound, and there were known to me things which not even the wildest of my former dreams had ever suggested. And all the while cold fingers of damp vapor clutched and picked at me, and that eldritch, damnable whistling shrieked fiendishly above all the alternations of babel and silence in the whirlpools of darkness around.

Afterward there were visions of the Cyclopean city of my dreams—not in ruins, but just as I had dreamed of it. I was in my conical, nonhuman body again, and mingled with crowds of the Great Race and the captive minds who carried books up and down the lofty corridors and vast inclines.

Then, superimposed upon these pictures, were frightful, momentary flashes of a nonvisual consciousness involving desperate struggles, a writhing free from clutching tentacles of whistling wind, an insane, batlike flight through half-solid air, a feverish burrowing through the cyclone-whipped dark, and a wild stumbling and scrambling over fallen masonry.

Once there was a curious, intrusive flash of half sight—a faint, diffuse suspicion of bluish radiance far overhead. Then there came a dream of wind-pursued climbing and crawling—of wriggling into a blaze of sardonic Moonlight through a jumble of débris which slid and collapsed after me amidst a morbid hurricane. It was the evil, monotonous beating of that maddening Moonlight which at last told me of the return of what I had once known as the objective, waking world.

I was clawing prone through the sands of the Australian desert, and around me shrieked such a tumult of wind as I had never before known on our planet's surface. My clothing was in rags, and my whole body was a mass of bruises and scratches.

Full consciousness returned very slowly, and at no time could I tell just where delirious dream left and true memory began. There had seemed to be a mound of titan blocks, an abyss beneath it, a monstrous revelation from the past, and a nightmare horror at the end—but how much of this was real?

My flashlight was gone, and likewise any metal case I may have discovered. Had there been such a case—or any abyss—or any mound? Raising my head, I looked behind me, and saw only the sterile, undulant sands of the desert.

The demon wind died down, and the bloated, fungoid Moon sank reddeningly in the west. I lurched to my feet and began to stagger southwestward toward the camp. What in truth had happened to me? Had I merely collapsed in the desert and dragged a dream-racked body over miles of sand and buried blocks? If not, how could I bear to live any longer?

For, in this new doubt, all my faith in the myth-born unreality of my visions dissolved once more into the hellish older doubting. If that abyss was real, then the Great Race was real—and its blasphemous reachings and seizures in the cosmos-wide vortex of time were no myths or nightmares, but a terrible, soul-shattering actuality.

HAD I, in full, hideous fact, been drawn back to a prehuman world of a hundred and fifty million years ago in those dark, baffling days of the amnesia? Had my present body been the vehicle of a frightful alien consciousness from Paleogeon gulfs of time?

Had I, as the captive mind of those shambling horrors, indeed known that accursed city of stone in its primordial heyday, and wriggled down those familiar corridors in the loathsome shape of my captor? Were those tormenting dreams of more than twenty years the offspring of stark, monstrous memories?

Had I once veritably talked with minds from reachless corners of time and space, learned the universe's secrets, past and to come, and written the annals of my own world for the metal cases of those titan archives? And were those others—those shocking elder things of the mad winds and demon pipings—in truth a lingering, lurking menace, waiting and slowly weakening in black abysses while varied shapes of life drag out their multimillennial courses on the planet's age-racked surface?

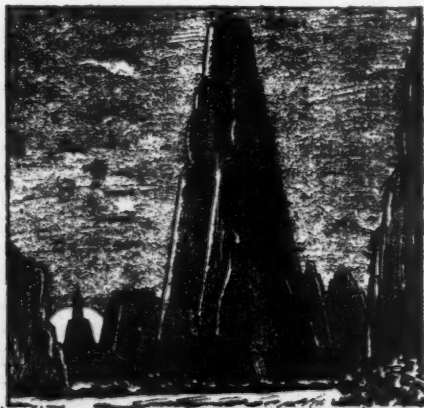
I do not know. If that abyss and what it held were real, there is no hope. Then, all too truly, there lies upon this world of man a mocking and incredible shadow out of time. But, mercifully, there is no proof that these things are other than fresh phases of my myth-born dreams. I did not bring back the metal case that would have been a proof, and so far those subterranean corridors have not been found.

If the laws of the universe are kind, they will never be found. But I must tell my son what I saw or thought I

saw, and let him use his judgment as a psychologist in gauging the reality of my experience, and communicating this account to others.

I have said that the awful truth behind my tortured years of dreaming hinges absolutely upon the actuality of what I thought I saw in those Cyclopean, buried ruins. It has been hard for me, literally, to set down that crucial revelation, though no reader can have failed to guess it. Of course, it lay in that book within the metal case—the case which I pried out of its forgotten lair amidst the undisturbed dust of a million centuries.

No eye had seen, no hand had touched that book since the advent of man to this planet. And yet, when I flashed my torch upon it in that frightful abyss, I saw that the queerly pigmented letters on the brittle, acobrowned cellulose pages were not indeed any nameless hieroglyphs of Earth's youth. They were, instead, the letters of our familiar alphabet, spelling out the words of the English language, in my own handwriting.



About Articles And Us

I have a surprise for you this month. John W. Campbell's articles on the solar system are starting in this issue. I didn't expect they'd be ready for us before next month. And did you notice that Elliott Dold is illustrating them? That, I think, is good news, too.

These articles will cover the general set-up of our solar system, then will discuss planet by planet what science has learned concerning our sister worlds. The scientific methods of observation will be described, and I'm certain that it will prove to be both a fascinating and instructive series.

Incidentally, those of our readers who live near one of the nation's "planetariums" should make it a point to attend, at least once. It will give you a feeling of kinship with the universe and will help you to understand and enjoy science-fiction more thoroughly.

Judging by the preponderant percentage of approval in our readers' letters, the April issue seems to have hit the spot. I hope that simply means that we are continuing our upward progress in story values and general interest. I believe it does, for surely we could not gather a finer group of authors than we offer in this issue: Lovecraft, Schachner, J. W. Campbell, Coblenz, Van Lorne, Williamson, and others!

And next month "Pacifica" by Schachner will positively appear. Don A. Stuart comes back to us with a great novelette "Frictional Losses"; and A. R. Long, author of "Scandal in the Fourth Dimension," returns to Astounding with "A Leak in the Fountain of Youth." And there are other stories which will go to make up an issue worthy of the event.

Oh, I forgot to tell you: The event is simply that next month's issue brings the new Astounding under the Street & Smith banner, to the same age that the old Astounding had attained under the previous publisher. Naturally, I want the issue to be a knock-out. I want it to represent the terrific advance of the new over the old. Help me to make it a real advance in circulation, too, will you? I need your support, now.

Progress is good, and must continue—but I've got to be able to justify my progressive steps by showing results. Publishers are willing to help so long as they feel the audience is definitely and positively behind the editor—and that means a distinct jump in the reading audience.

Besides, it would be a wonderful way to celebrate next month, wouldn't it?

The Editor.



A Change of Heart.

Dear Editor:

The April cover has compelled me to write a third letter to *Astounding Stories*.

It happened this way: After finishing the issue—and a splendid one it was, too—I turned to *Brass Tacks*. I came, innocently enough, upon a letter that attracted my attention. "Why," I said to myself, "this fellow's thoughts coincide exactly with what I've been thinking." Then, the bun that I had been dunking dropped from my gaping mouth as I saw who had written the letter. It was my own!

When I wrote that lovely poison-pen missive, I was glaring at a gaudy, misleading cover. Since seeing the April cover by Howard Brown, however, I have had a complete change of heart. That job was just what I was referring to when I said, "The beautifully harmonious illustrations of yesteryear."

Although once again the indispensable rocket ship was there, the simple clearness of the cover's pattern made a lasting impression on me. No loud, clashing colors; merely a clear-blue background that removed immediately all thoughts that this was just another pulp magazine. Thanks a million, artist Brown—you deserve and live up to the title "artist."

A brief word about the stories: Please don't listen to those fellows who demand serials, longer novelettes and fewer short stories. The shorts are nearly always the finest of all. They are never tedious and every one has a surprise ending that is delightful.

Say, am I really writing this? I thought I was a critic and a cynic. So long, and best of luck!—Jerry Turner, Kohut, Harrison, New York.

There's Always Room for Improvement.

Dear Editor:

I have been reading *Astounding Stories* since it first appeared upon the market. I hailed the first issue as the beginning of a new era in science-fiction. And I was right. From the first, I was almost, if not completely satisfied with your magazine, or at least, so I thought at the time. In short, I have always thought

Astounding to be very nearly perfect. And then came 1936 and the January issue.

Strange City by Warner Van Lorne and *The Isotope Men* by Schachner were both as far above the former standard of *Astounding* as that magazine is above its nearest competitor! And the February with the first part of *At the Mountains of Madness!* Truly that story will make history. Lovecraft, while lacking in ability to create vivid characters is excelled only by Edgar Allen Poe in creating a desired mood in his readers. His masterful description and his repetition of certain themes casts an almost hypnotic trance upon the reader which persists long after the story is finished.

Then came the March issue with *Entropy* by Schachner. And still I was so dumfounded at finding that the *Astounding* prior to '36 could be improved upon that I could not muster my faculties enough to write you.

And then came April! The cover alone is enough to compensate for the worst story ever written. But no such compensation is necessary. Every story in the April issue is slated to become a classic. Lovecraft even surpasses his first two parts of *At the Mountains of Madness*, and in the same issue we have Binder and his *Spawns of Eternal Thought*, which ranks with the best, even in this, the first part, which in most serials is a bit dry.

But, to top it all off, you announce the coming of Jack Williamson and *The Cometeers*, a sequel to *The Legion of Space* which is, in my opinion, the greatest serial ever to appear in a science-fiction or any other type of magazine.

All in all, the April issue can be said to be the tops as far as literature can go. Indeed, it is so great that it forced me to write this letter in appreciation. Even though *Astounding* has always been good, you have improved it until I can see little room for any more improvement.

And now for a few requests. First, let's have a sequel for *Strange City*, one for *Entropy*, and one for *The Cosmo Trap*.

Second, go back in your files to the July, 1934, issue and look over *Before Earth Came* by John Russell Fearn. Then give us another story like it. That story ranks as high with me as does a novelette or *The Legion of Space*.

Third, continue making *Astounding* as good as the last four issues—January through April.

Fourth, give us another cover like Brown's glorious rhapsody in blue and silver on the April cover.—James L. Russell, 1126 Clement Ave., Charlotte, North Carolina.

A Request for More Realism.

Dear Editor:

Many thanks for the excellent serial by H. P. Lovecraft, and I hope that *Astounding* will print many more. What about a sequel to *At the Mountains of Madness*?

Other stories that I particularly liked were *The Shapes* and *The Cosmo Tresp*. May I, as a newcomer, plead for more realism? Mr. Favre outlines the case in your March issue, and I believe that his letter deserves attention. *Astounding* is doing things for science-fiction.—Duane W. Rimeel, Box 100, Anotin, Washington.

We Like Opinions.

Dear Editor:

Now that *Astounding* Stories stands practically alone in the science-fiction field, and also on top of the heap, I thought I'd write in my opinions to Brass Tacks for what they are worth. Yes, I know what they're worth. A while back I remember it would be a waste of time and money to walk to the newsstands to purchase a copy. Now, however, I'll let the remainder of this letter speak for itself.

All in all, the contents are well-balanced, neither the adventure nor the thought-variants dominating the type of story to be found in the magazine. So you see, it is setting a high standard for the other magazines to follow.

However, you need something to capture the readers interest and hold it. You could leave it to the fans themselves to pick out the type of department they would be most interested in. Certainly you might grant one of the requests made by a large number of fans, i. e. writing editorial comments after each letter in Brass Tacks.

Say, when am I ever going to see a cover by Wesso? Marchioni is good, but he is not consistently so. However, he is appreciated. In fact, each of your art staff has a peculiar quality of his own, though not particularly fitted for science-fiction illustrating. That is, all except Bold; the only magazine he could possibly illustrate would be one that contains horror tales and the like.

One of the best stories that I have ever read is *Strange City* by Van Lorne. He sure can put a story over. In fact, that piece of writing fairly clamors for a sequel—and we won't stop clamoring until we get one.

At the *Mountains of Madness* would have been very good if Lovecraft hadn't overdone it by describing the walls and murals, etc. The ending was altogether boring and not up to average. Please let's not have another such failure going under the alias of a serial.

Entropy was very good and well up to the author's standard. Sequels seem to be in the air so why not one here? It would sure come in right handy. *The Shapes* also had something about it that was different. Mr. Miller paints his characters vividly for such a short-short tale.

Spaces of Eternal Thought holds promise of being the best serial in quite some time. Binder is better in serials than in shorts.—Gene Noguere, 3021 Laconia Ave., New York, New York.

A Correction.

Dear Editor:

In a recent editorial, you remarked that *Fantasy* was the only printed fan magazine. This is not true and I should like to correct the error for your readers.

There are two other such fan magazines now

being printed at fairly regular intervals. These are the *Photograph of the Terrestrial Fantasy-science Guild*, and the *Science-Fiction Critic*, an independent publication.

Unlike *Fantasy*, the *Science-Fiction Critic* is not a magazine devoted primarily to giving news of activities in various science-fiction circles. On the contrary, the entire magazine is given over to a critical aspect of stories, fan activities, and the trends of science-fiction as a whole.

Each issue contains detailed reviews of all fans and professional science-fiction magazines, book criticisms, movie reviews, articles, and interviews with authors and fans. Circulation is between 75 and 100 copies monthly. The *Critic* contains ten or twelve pages and sells for five cents per copy. Thank you.—Claire P. Beck, Science Fiction Critic, 214 East Seventh St., Reno, Nevada.

On Artists and Imagination.

Dear Mr. Tremaine:

How can any one say that Howard Brown has no imagination? His illustrations for *At the Mountains of Madness* gave that story a distinct flavor that made Lovecraft's superb style all the more enjoyable.

Wesso gets more like his old self with each drawing. Let him do some space ships, machinery and alien beings. His technique has improved immensely since his last science-fiction illustration.

Frankly, Mr. Tremaine, there has never been a better issue—and I mean it. *Spaces of Eternal Thought* will be a record breaker. That's a prophecy.

Marchioni's figure work, although tremendously improved, is still stiff and angular. But I'll wager Lawler has told him that a hundred times. Nevertheless, he's still your worst illustrator.

I'd like to see Leo Morey in your pages. With the possible exclusion of Brown he has more real conception of the science-fiction drawing than any one else.

But in praising Brown don't get the idea that I like his covers. I don't. I'll tell you why. In black and white, Brown gets distance, life and mystery in his work. But in color work, he just cannot compare with Wesso. I suppose the cover for April was blue for newsstand purposes—but it looks poor from the artistic point of view. That excellently done space ship would have been literally beautiful in its natural setting.

Kill the artists who don't sign their work. And when pseudonyms are used, give us a tip somewhere as to the real identity.

So I'll cut before I get too trite, with another plea for a quarterly. I feel that if we keep on hammering, we'll eventually get a quarterly, just as we got smooth edges after a half dozen years of harping.—Law Torrance, 1118 Fifth Ave., Winfield, Kansas.

He Says the 1936 Issues Are Better.

Dear Editor:

The magazine was what I would call a very worthwhile object this third month of the year 1936. The cover of the April edition was exceptional and the edges—what edges! I couldn't have done better myself.

Since you have granted all our wishes, it's time to think up some new ones. So here's my first one. Why not put our editorial page at the first of the magazine, or just in front of Brass Tacks?

As month after month passes we will regret Stanley Weinbaum's death even more. His passing marked the end of a promise of a grand series of stories in *The Red Peri*. May the memory of Weinbaum and his science-fiction go down through the space of time forever.

I have purchased the April issue of *Astounding* Stories and, although I haven't read a single

story, the illustrations seem to show the stories at least up to par. I have been keeping up with *At the Mountains of Madness* and I hope the ending is as interesting as the first part of the story.

As I said in my first letter, I hope for a sequel to *Strange City*. I'm sure every one would like to know more about that strange world. Stopping the story there is like cutting some one off in the middle of an interesting sentence. I am glad to see a sequel to *The Son of Old Faithful* in the April issue.

In regard to the issues of the year 1936, they are excellent so far. The stories are above average, and I am looking for ones of the same type for the rest of the year.

Mathematics was good, and I'm looking forward to its sequel: *Mathematics Plus*. I also liked the end of *Blue Magic* very much.

I agree with all those letters wanting Hawk Carse back. That was one of the greatest series of science stories I know.

About Van Houten's suggestion to put *Astounding Stories* on the radio. I think it would be an excellent idea. Aside from advertising the magazine immensely, it would be a great program.—Calvin Fine, Box 441, Kilgore, Texas.

Another Boon for Brown.

Dear Mr. Tremaine:

The April issue was full of surprises. I think Howard V. Brown surprised you by painting an image of Saturn in the upper, right-hand corner of the cover; this fixed it so that you couldn't put the 50c sign there, and you had to put it somewhere in a less conspicuous place. Turn around, Mr. Brown, so I can pat your back.

He surprised me, too, by turning out a really fine interior illustration for Binder's *Spawns of Eternal Thought*. It's not often that his interior drawings merit any praise; the only other ones that I've liked were the illustrations for *Decey Jones' Ambassador*.

Gallun's *Child of the Stars* disappointed me; but, after all, no sequel could capture the appeal that the original story, *Old Faithful*, had. *Outlaws on Callisto* seemed to be a carbon copy of *The Red Peri* for the first half of the story, but there the similarity ceased. The rest was distinct and original—making it the finest story in the issue.

Van Lorne's *White Adventure* came in second. The only fault that I found with the story was the omission of any explanation as to the origin of the mysterious unmeltable snow. However, keep your eye on that fellow Van Lorne; maybe we have a second Weinbaum in the making.

Oh, boy! A sequel to *The Legion of Space*! But that means that I'm going to have to wait for a full half year before I can start the serial. Darn it!

And now to get down to my monthly butting-into-other-people's-business. In other words, I'm gonna attempt to answer some of the letters in Brass Tacks. A poor substitute for an editorial comment, but—

Wolford: I'll cast my vote with you for a return of the artist Muller; he had a distinctly original style which should grace the pages of *Astounding Stories* at least once every month. A futuristic artist for a futuristic magazine.

Watson: The present-day scientists may be old-fashioned, mistaken, and stubborn in some respects, but I'd feel safer sticking to what my dear old physics teacher said than to the superstitious "pseudoscientific" stuff that Fort wrote. By the way, if his *Lo!* affected you in such a manner, you should read his *Wild Talent*. Whew!

Hall: By reading between the lines, so to speak, I come to the conclusion that there are still a few improvements to be made in good old *Astounding*.

Mr. Palmer: You can count me in on the Stanley G. Weinbaum memorial.

Johnson: I'll stick up for the editor in comparing *The Red Peri* with Hawk Carse.

Jerome: Welcome back!

Jensen: A good criticism!

Stubbs: Sure, an occasional cover by Wesco would be swell; but Brown certainly has not poor color values. He doesn't make jarring contrasts, as does Paul. True, there is a contrast of colors on the April cover but it isn't a gaudy contrast. One exception: the January cover was terrible!

Lyman Martin: Thank you, Lyman. I said more in my reply to Welch than our editor; but, of course, there is a limit to the amount of back talk than can be printed.

G. B. of Indiana: From the way in which you made your comparisons, it would appear that you do not hold Edgar Rice Burroughs very high in your estimation. Mr. Burroughs is both a fine writer and a swell fellow, as I have found out from past experience.

Corwin Stickey: You may accept an affirmative vote from me. A science editorial would be very welcome, but not if it did away with our editor's present refreshing pep editorials.

Mr. Eschback: You seem to be rather vehement for a science-fiction author. I enjoy your stories, though.

Jamison: I wouldn't say that Marchioni is actually sloppy. He does, however, go in for angles and wrinkles too much to suit me.

To the Editor: The trimmed edges still knock me over!—Willis Conover, Jr., 280 Shepard Ave., Kenmore, New York.

Cometeers Runs in Four Parts.

Dear Editor:

April is one of the very best issues ever published. At *the Mountains of Madness* was a good story, but I think that Lovecraft paid too much attention to small details. It was a very good word picture of the strange beings who inhabited the Earth before humanity.

The announcement of *The Cometeers* was one of the best surprises we have had in a long time, especially since it is to be a sequel to that great story *The Legion of Space*, which did not seem to need one. I have no doubts but what some one will send in a complaint about the cover with its fine covering and no disfiguring words all over it. *Child of the Stars* was a very fine sequel to *Son of Old Faithful* and all the other stories were good.

E. M. Stubbs: I am very much afraid you are color blind when you say Brown's covers are terrible. Better have your eyes examined.

Clay Bennett: I agree with you on *Strange City*. It demands a sequel.

The Cometeers again! If you, editor, stretch it to more than six parts, I'll—well, I'll wait for the rest of it with curses on my lips and impatience in my heart.—Lyman Martin, 65 Howe St., Marlboro, Massachusetts.

Isn't Science Weird Sometimes?

My dear Editor:

It does seem that such a story as *The Chrysalis* is hardly suited to such a splendid magazine as *Astounding Stories*. *The Chrysalis* partakes of the occult; it is a sort of weird story. *Astounding Stories* should be strictly science-fiction. Truth is stranger than fiction, true—but the weird is not based upon science. The treatment of rays, bending them around an induced vacuum, may be improbable, but might be possible as other things.—Darwin Kellogg Paver, 1916 Chippewa St., New Orleans, Louisiana.

Appearance Has Its Points.

Dear Editor:

May I express my appreciation for the growing dignity of your magazine? I can understand the attitude of R. W. Hall in the April Brass Tacks, which I have just received. In

fact, I have many times laughed at myself, told myself that appearance did not matter if I enjoyed contents. I make no secret of it to my friends—let their amusement fall where it will—that I read science-fiction way back when, as a kid in boarding school, I discovered this form of fiction and had to hide it under my coat because it looked like the trashy reading that it wasn't.

But, as an adult who has been engaged for several years as a research person under a psychiatrist—and therefore sensitive to what others might interpret as infantilism—may I point out that appearance does have its points?

I have long been embarrassed by two things: one is the apparent immature level of fellow readers, judging from the type of letters that have often been printed in the past—and that seems invariably to be the part of the magazine opened first when some acquaintance idly turns the pages; the other is by the cheap look of the magazine as a whole.

It is all very good to say that such criticism is superficial, but if you had had the sort of experience I had—of people jumping to the conclusion that your tastes were similar and bringing impossible dime fiction to exchange for the magazine they'd found in your quarters, just because science-fiction magazines looked like the sort they read—you'd appreciate things like appearances, etc.

In both respects, things have changed greatly in recent months. Your last (April) issue is in as good taste as to exterior appearances as it has long been as to contents. And, quite suddenly in the last few months, you have been printing letters from intelligent adults—people, who, judging from their letters, I should feel honored to know and with whom I should be honored to be identified. Nor does one feel less honored to have reading interests in common with young people in high school, when, as in some cases, they seem alert, balanced, mentally mature.

Joseph Watson appears to be that way. Too few, have, or keep, that experimental point of view and too many professors encourage it. I switched to psychology in college for the sole reason that the head of that department admitted openly that the best of them were groping their way—and invited assistance in arriving at tentative conclusions. It's great to be in on the solution to problems whose answers your superior does not pretend to know.—W. K. Nemjored, 518½ Main St., Quincy, Illinois.

On Lovecraft and Merritt.

Dear Mr. Tremaine:

I don't see why every one is making such a fuss about *Strange City*. In my opinion it was one of the run-of-the-mill adventure stories with a hazy theory of electrical life transfer which the author doesn't really understand himself. As for description, Schachner far surpasses Van Lorne's feeble efforts. I can find no reasonable explanation for the popularity of the latter's story.

Concerning the origin of the clubs, one might think that last year's epidemic would satisfy even the most fraternally-minded fan.

I agree with Mr. Miller that Astounding Stories should reinstate these columns dealing with obscure announcements of interest to science-fiction fans. This would serve as a science department which Astounding Stories has long been in need of.

As to the perfection of *Moon Pool* I beg to differ. In my opinion, *Skylark of Space* by Smith far outranked Merritt's work. However, Mr. Jensen has chosen an apt comparison. Merritt and Lovecraft are the outstanding contemporary fantastic authors. It is only fitting that the former's work be used as a yardstick by which to measure the latter's.

I personally prefer Lovecraft to Merritt, but I concede the superiority of *Moon Pool* over *At the Mountains of Madness*. The latter story really calls for a sequel, dealing with the Starkweather-Moore Expedition.

In closing, allow me to compliment your artist Brown on the best cover of the year. It gives my eyes a rest.—Alan J. Alsenstein, 801 Academy Rd., Woodmere, New York.

We Do Try to Please.

Dear Editor:

Another delightful issue of Astounding! Just think! After reading *Mathematics* a couple of times I decided it needed a sequel. After thinking the matter over I concluded that it needed a sequel more than any other story. And what to my wondering eyes should appear but *Mathematics Plus*!

I am glad to see the conclusion to *At the Mountains of Madness* for reasons that would not be pleasant to Mr. Lovecraft. The new serial is much better. Eando Binder did a better job there than on *Ship that Came Back*.

The Cosmo Trap was a nice story with two very new ideas. *Child of the Stars* is pretty good, but Gallun is capable of better yarns. While the title suited it, it would have suited other tales better. I liked *Outlaws on Callisto* even though it resembles *Redemption Cairn*. *The White Adventure*, I am sorry to say, is inferior to *Strange City*. While you're still in the mood for sequels, Mr. Tremaine, how about one for *The Chrysalis*? Such a swell story is published at best every two years.

This letter isn't much—but, next time, I'll have a real idea.—Robert Thompson, Upper Darby, Pennsylvania.

Bricks in Plenty.

Dear Editor:

I hope you take the inclosed "Irish confetti" in the spirit in which it is given. It has to do with the March and April issues which, to put it mildly, were far below your average.

First, why in the name of science-fiction did you ever print such a story as *At the Mountains of Madness* by Lovecraft? Are you in such dire straits that you must print this kind of drivel? In the first place, this story does not belong in Astounding Stories, for there is no science in it at all. You even recommend it with the expression that it was a fine word picture, and for that I will never forgive you. If such stories as this—of two people scaring themselves half to death by looking at the carvings in some ancient ruins, and being chased by something that even the author can't describe, and full of mutterings about nameless horrors, such as the windowless solids with five dimensions, Yog-Sothoth, etc.—are what is to constitute the future yarns of Astounding Stories, then heaven help the cause of science-fiction. I know that it is your policy to print more of the whimsy type of science-fiction than of the type having science as a base but, at least, you don't have to wish this bunk on us.

The second brick is aimed at *The Chrysalis* for being almost as absurd as *At the Mountains of Madness*. All that I can say is that a chrysalis of this nature would be more likely to be destroyed than saved. Custom is to bury or burn the dead, not to wonder how preservation was assured before the time of man, which, after all, is quite recent. Too bad that the "thing" didn't kill the author along with his friends with the consequences of the story.

All the other stories in March and April, with the possible exception of *Spason of Eternal Thought* on which I reserve judgment, are run-of-the-mill stories not worth commenting on.

May I call your attention to the fact that it is a year since you published a story by E. E. Smith or John W. Campbell, Jr.? How about another of these for those of us who like this type?

You may print this letter or not as you see fit. I feel that my bricks were justified and assure you that when your stories are good you

may expect roses from this same source.—Cleveland C. Soper, Jr., 381 N. Firestone Boulevard, Akron, Ohio.

Brass Tacks Better Than Stories?

Dear Editor:

This is the first time I have written to your magazine although I have been reading it since it first came out.

The cover of the April issue was swell. Congratulations! *Spots of Eternal Thought* started off pretty well. *Child of the Stars* did not live up to expectations. *Outlaws on Callisto* was good, but it had a plot as old as the hills. The three short stories were all good. Brass Tacks is the best part of the magazine. The trimmed edges sure make Astounding look swell.—Larry Maran, 210 W. 101 St., New York, New York.

But We Do Invite Criticism.

Dear Mr. Tremaine:

First of all, I would like to ask you not to publish any letters that merely list likes and dislikes. It does absolutely no good to say whether each story in a particular issue is bad, marvelous or just so-so.

The April issue was an improvement, but the March and February Brass Tacks contained dozens of letters saying the same thing. I might as well add my congratulations for the smooth edges, for they certainly are welcome. Jack Darrow's one-word letter was quite amusing.

The loss of Stanley G. Weinbaum is a serious thing. He will not be replaced for many years, in my opinion. The idea of publishing his best works in book form is very good, but it will be hard to say which of his stories should be left out, all of them being so much better than the usual run.

Authors we need more or some of are: Manning, Vincent, Keller, Flagg, Pratt, and Phillip J. Bartel.

The cover for the April issue was really good, much better than the last two. It reminded me of the August, 1934, cover—the one for *The Skyark of Valeron*. One little thing I like about the cover is the color of the words, Astounding Stories. It is never the same two months in a row. The yellow-on-black against the blue background is very effective.

The best recent stories have been: *Mathematica*, with its bewildering science; *Entropy*, much better than most of Schachner's yarns because there was no war in it; *Child of the Stars*, superbly told by Gallun. The latter is greatly improving and in time he may come to fill Stanley Weinbaum's place. The return of Wellman is a great thing; his story was excellent up to the last page, but the end was childish and very poor. Also, your short stories have been good lately.—Richard B. Cromwell, 6 Upland Rd., Baltimore, Maryland.

Reaction on Tin.

Dear Editor:

Having read Joseph Watson's letter in your April issue, I wish to reply to him through Brass Tacks, that I partially agree with his discussion upon "conventional science." However, there is a part of it in which our views conflict sharply.

First, my agreement: I agree with you, Mr. Watson, in stating that an instructor in science should not teach scientific theory as fact merely because it is stated as such in a textbook. To do this would be contrary to scientific methods which said teacher should apply. Science consists of forming theories from cer-

tain observations, and when these theories fail to comply with further observations or experiments, they are abandoned and new theories evolved. In this way facts are sometimes synthesized from theories. All scientific progress is based upon this method, and when one individual attempts to disprove an observed fact with an incomplete, imaginative hypothesis based on partial observation, he is no longer a scientist.

Now let us consider the part with which I do not agree: You, Mr. Watson, stated that sulphuric acid would not react with tin, and used this fact to partially prove your point against conventional science. You stated further that, without special treatment, you experimentally proved that they would not react. It is with this statement that our experiments conflict.

To prove that they would react under certain conditions without special treatment, I went into my home laboratory and proceeded to place a small piece of C. P. tin in 2cc. of C. P. sulphuric acid and observed no reaction. So far we agree, but upon heating the contents of the test tube a violent reaction took place with a rapid evolution of sulphur dioxide. Thus proving my contention that, experimentally, tin will react with concentrated sulphuric acid under certain conditions without special treatment to either substance involved in the action.

I would be glad if you yourself would repeat my experiment and communicate your results to me, either through Brass Tacks or by personal letter.—John R. Miller, Jr., Millheim, Pennsylvania.

An Annual Letter.

Dear Editor:

I haven't written for about a year, so I thought I'd congratulate you on your steady improvement. You've brought Astounding Stories up until it's the finest in the field. The last few issues seem to prove this. *The Isotope Men*, *Strange City*, *Mathematica*, *Entropy*, *Child of the Stars* are all science-fiction of the highest type. Keep it up and your circulation will never drop.

Now let's get down to Brass Tacks: The April cover was fine; I like a simple scene like this.

Child of the Stars was worthy to stand beside its two predecessors. *The Chrysalis* just didn't appeal to me. *White Adventure* was a well-written, interesting story, built around a good plot. *The Cosmo Trap* was all right. *Outlaws on Callisto* reminded me of *The Red Peri*.

At the Mountains of Madness was poor, until the last installment when it ended only fair. I would never recognize Lovecraft in the mediocre tale.—George R. Griffin, 1 Monument St., Portland, Maine.

Lightning Again.

Dear Editor:

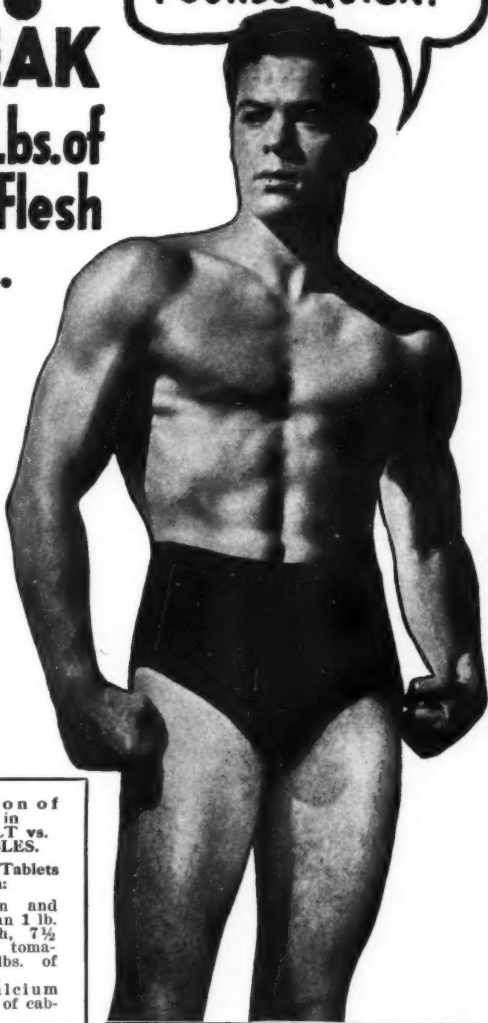
Mathematica by Fearn was interesting as well as thought-provoking. Just keep up the good standard of stories and I'm satisfied. What is the matter with the idiots howling for Paul? Great Jupiter, I think Brown has him by the ears, really.

Will you kindly remind Robert L. Harder, Jr., Berwick, Pa., to go back to his science classes because such unfounded correcting of a positive statement as occurred in Mr. Montague's story about the lightning going up from the ground not being natural. It isn't natural because lightning travels from the clouds to the ground. It is the ionized molecules of air that travel up to the clouds, forming a path for the current to come down. Check up on your science and radio theories, Harder. Best of luck to your magazines.—Charles Shipley, 1207 Park St., McKeesport, Pennsylvania.

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